

FIG. 1A

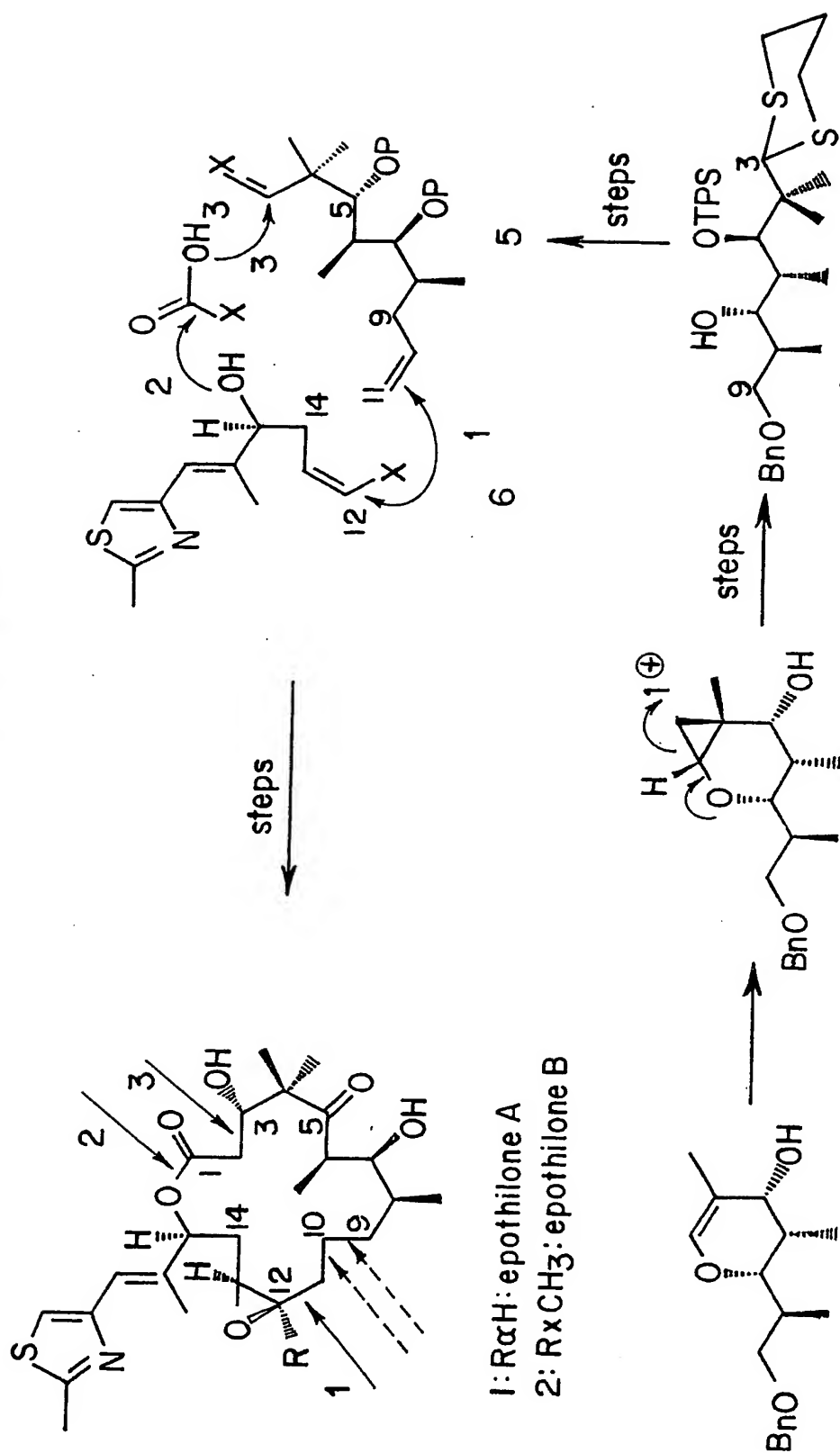
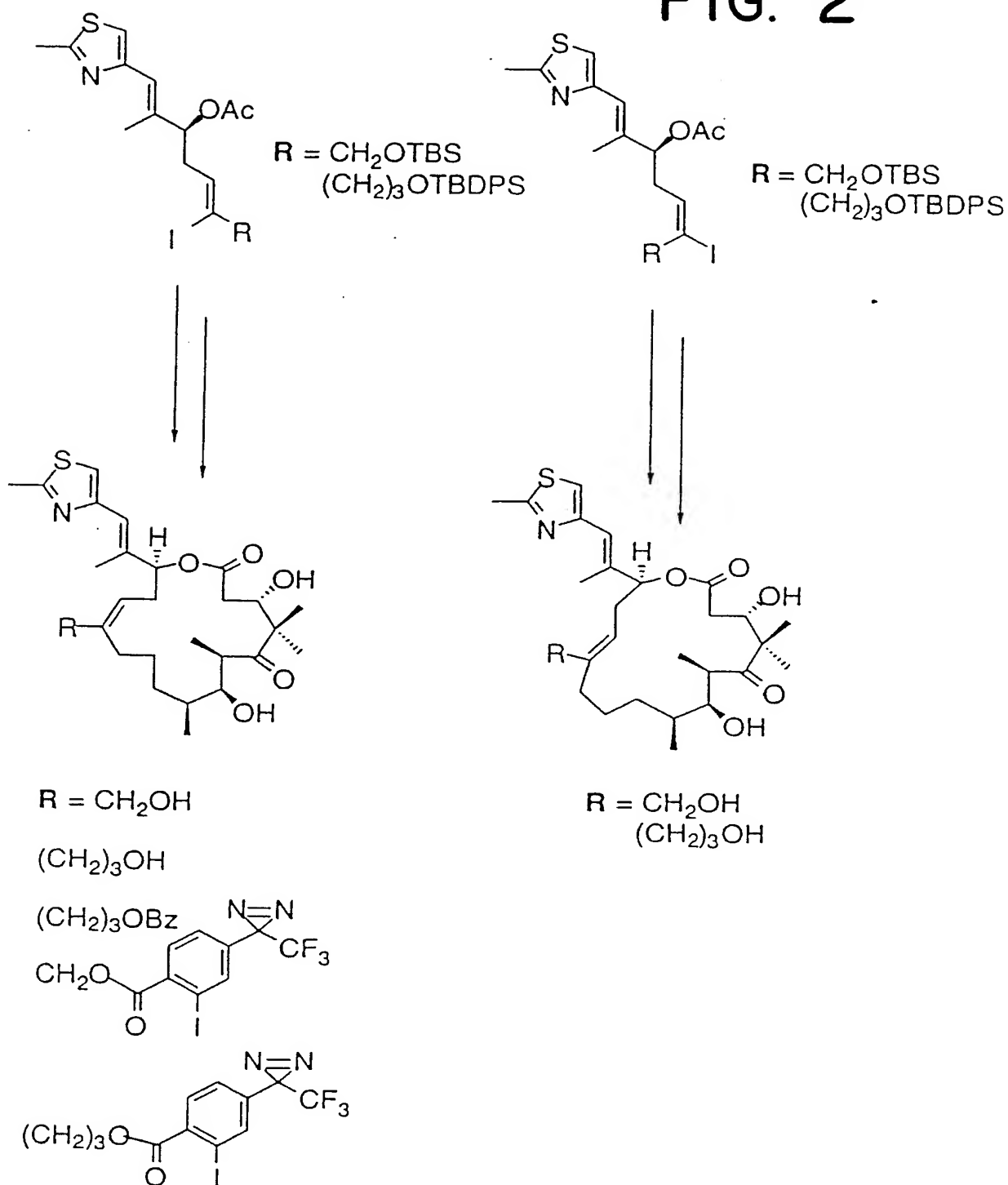




FIG. 2



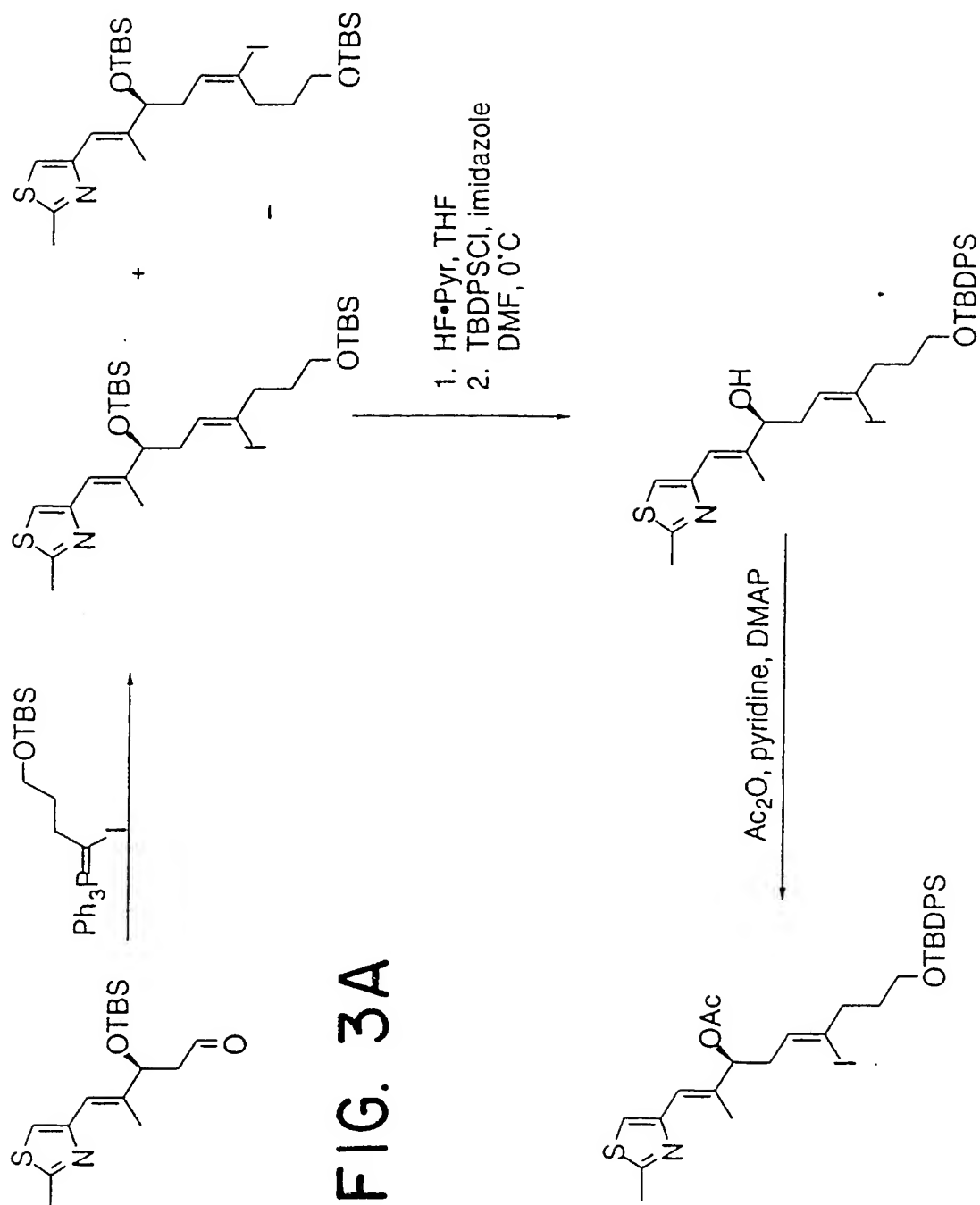


FIG. 3A

FIG. 3B

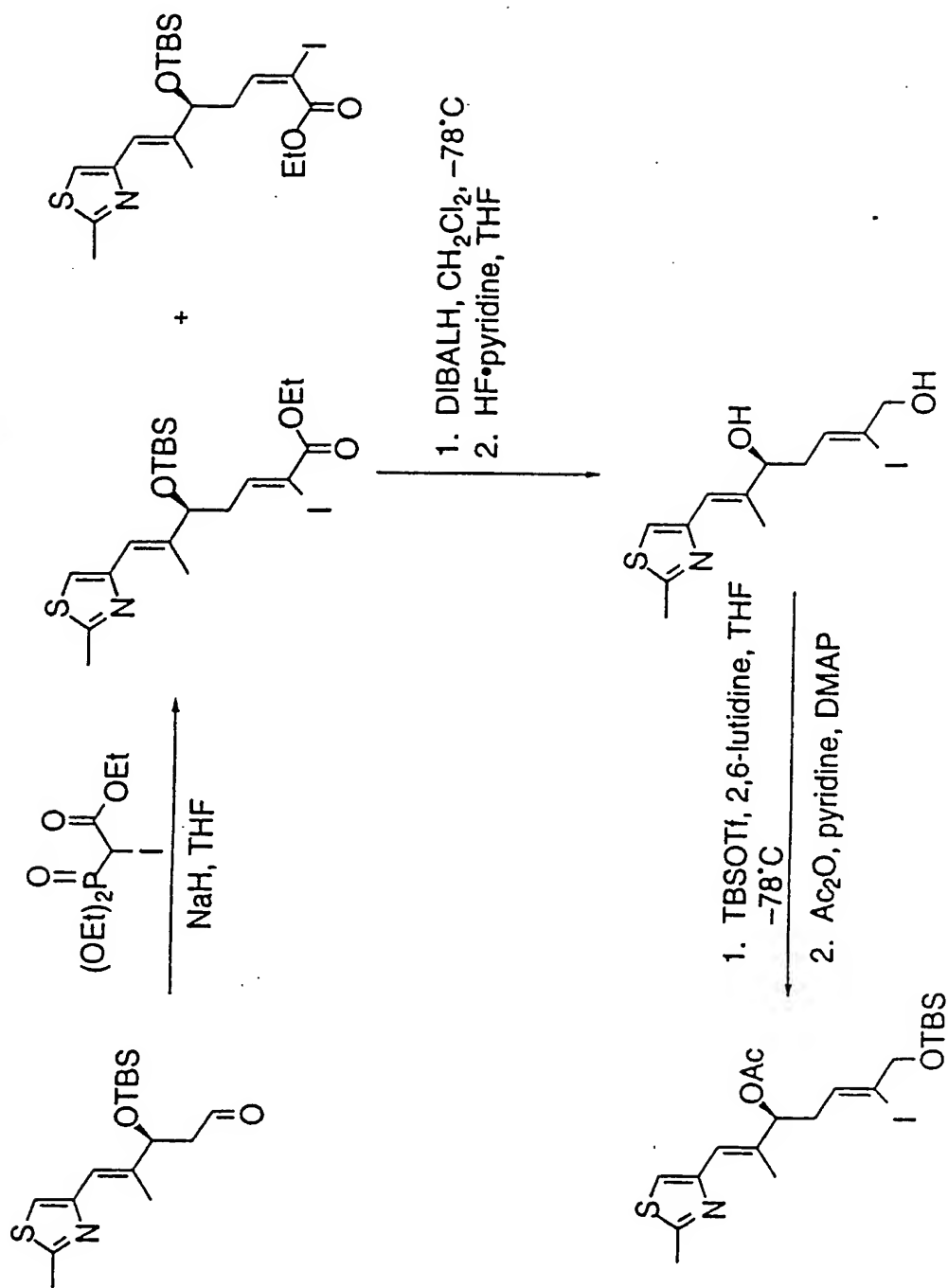
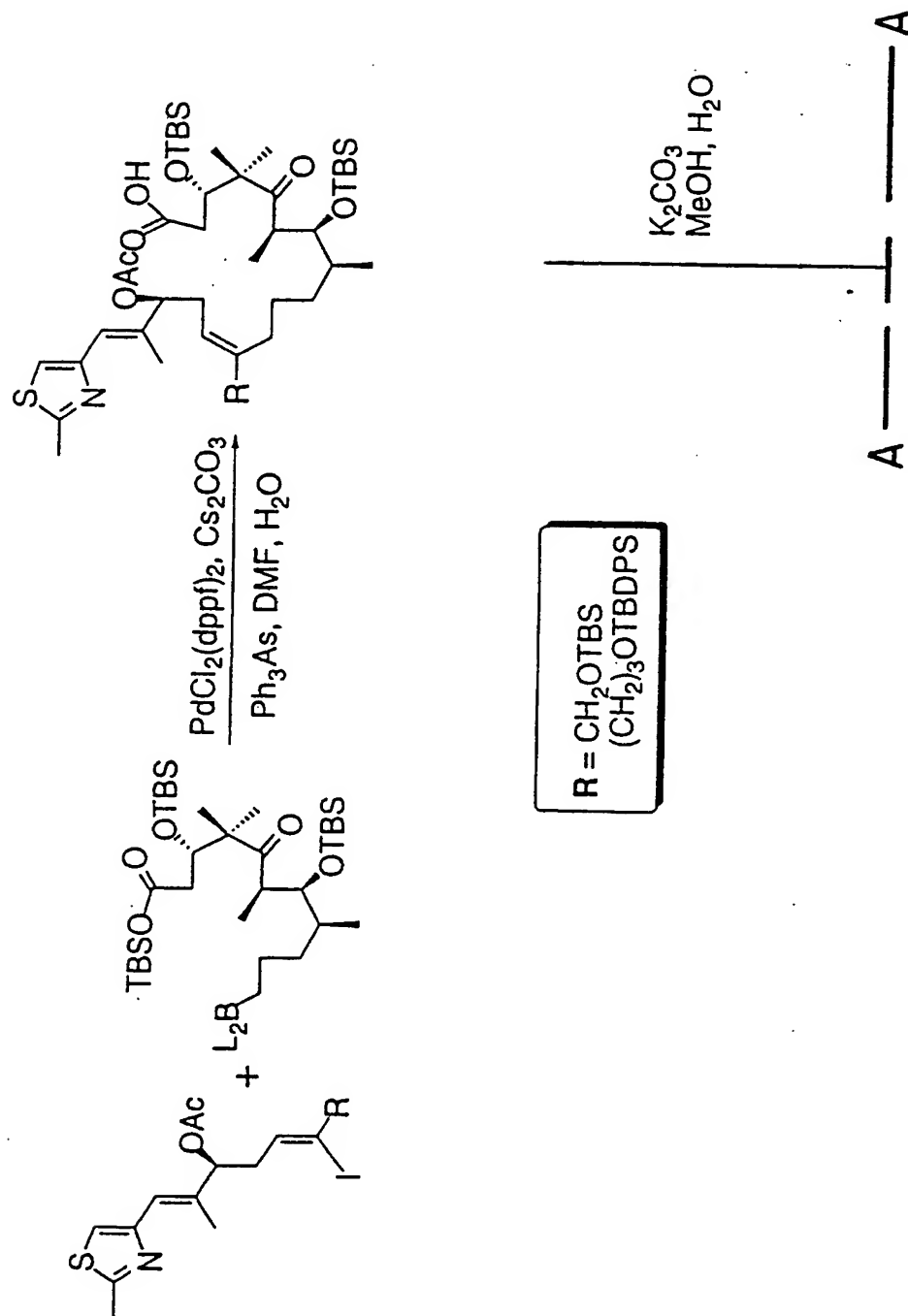


FIG. 3C



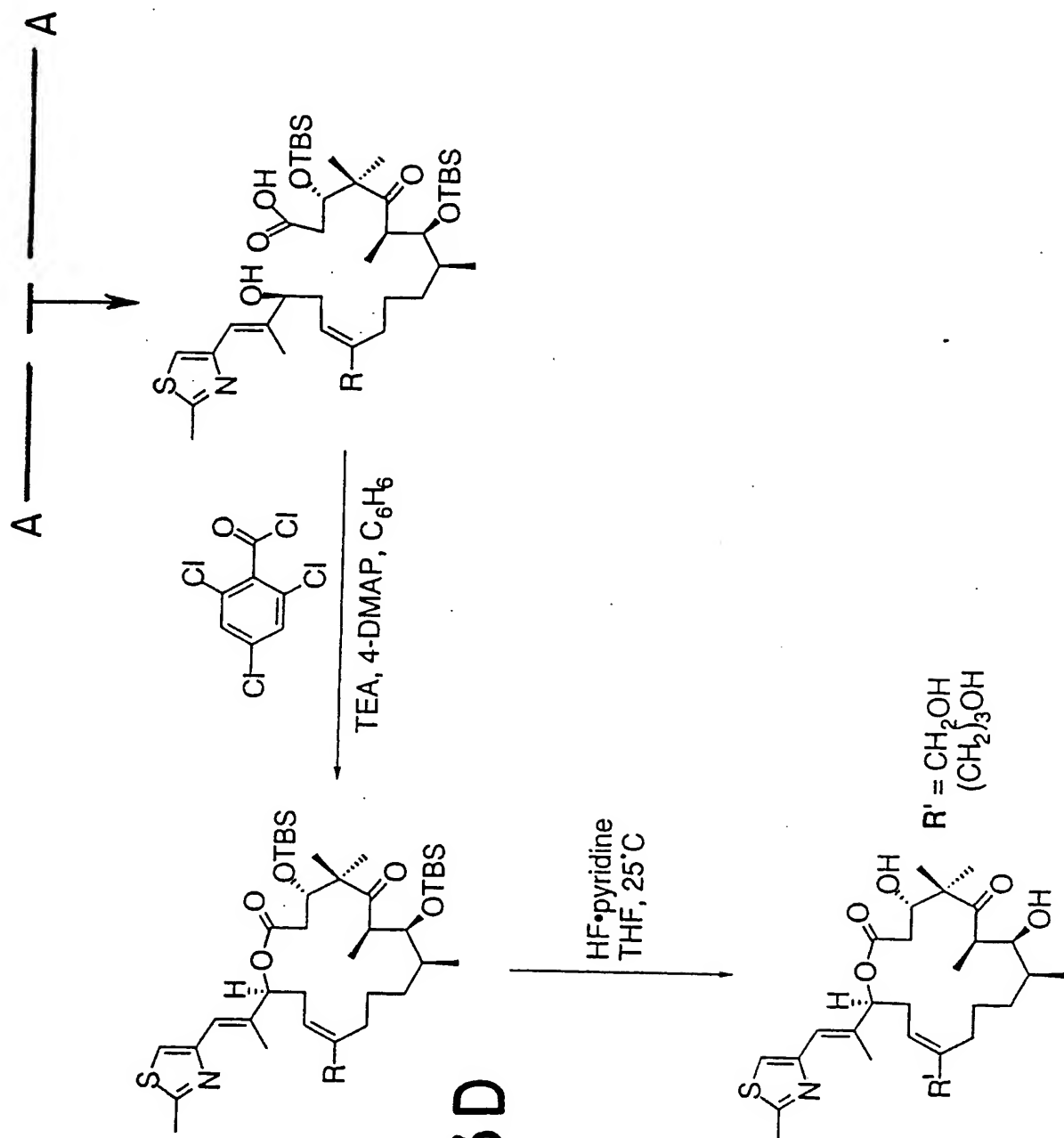


FIG. 3D

FIG. 3E

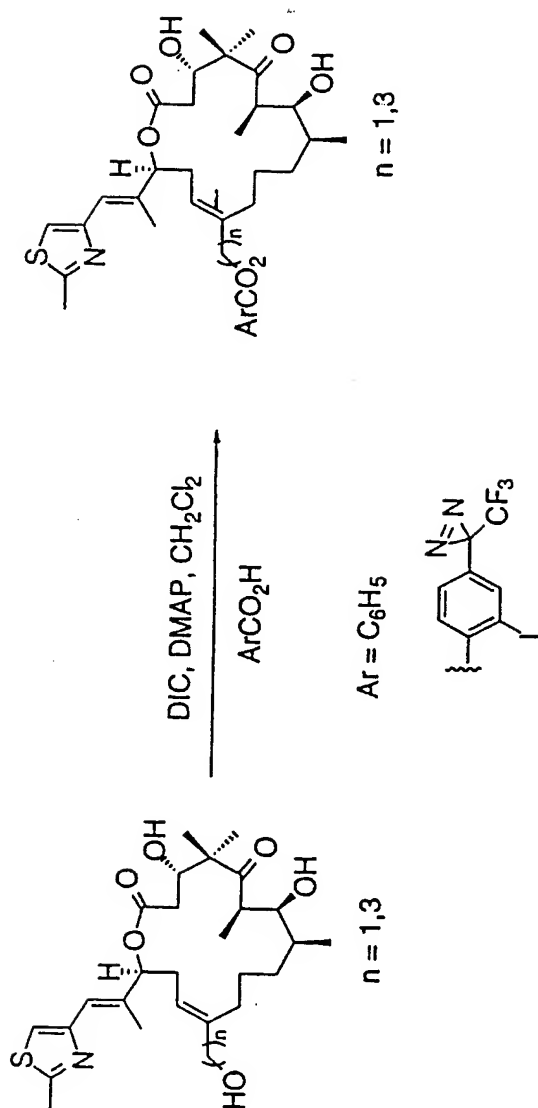
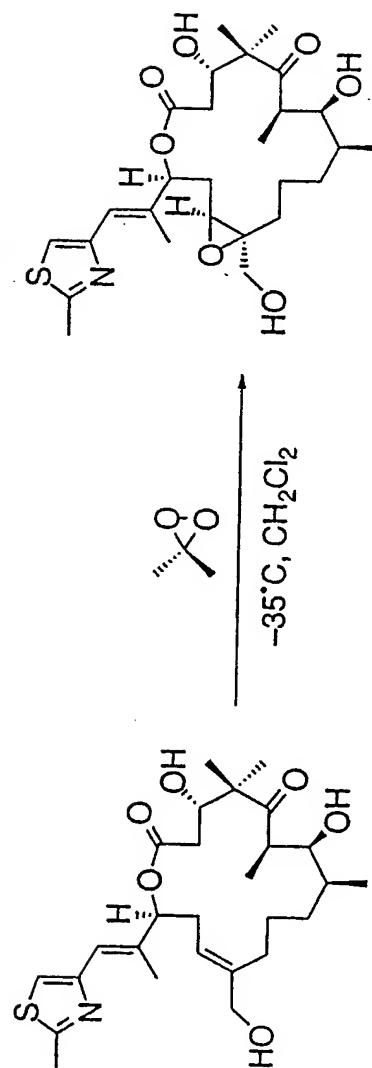


FIG. 3F



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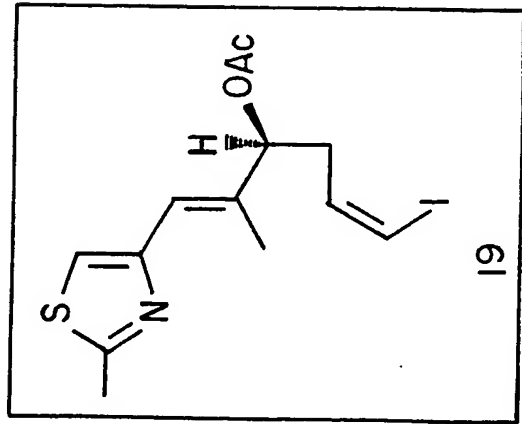


FIG. 4B

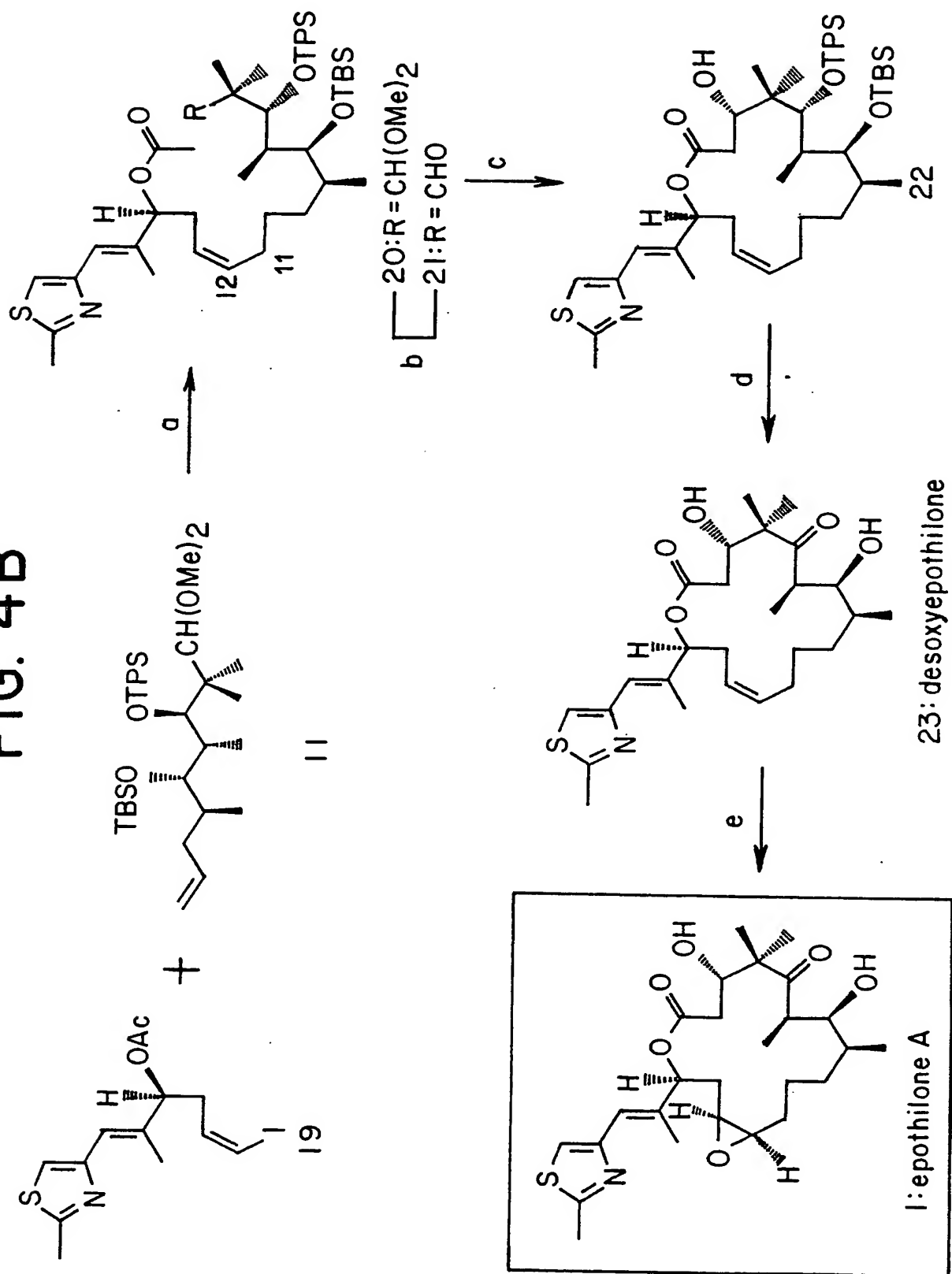
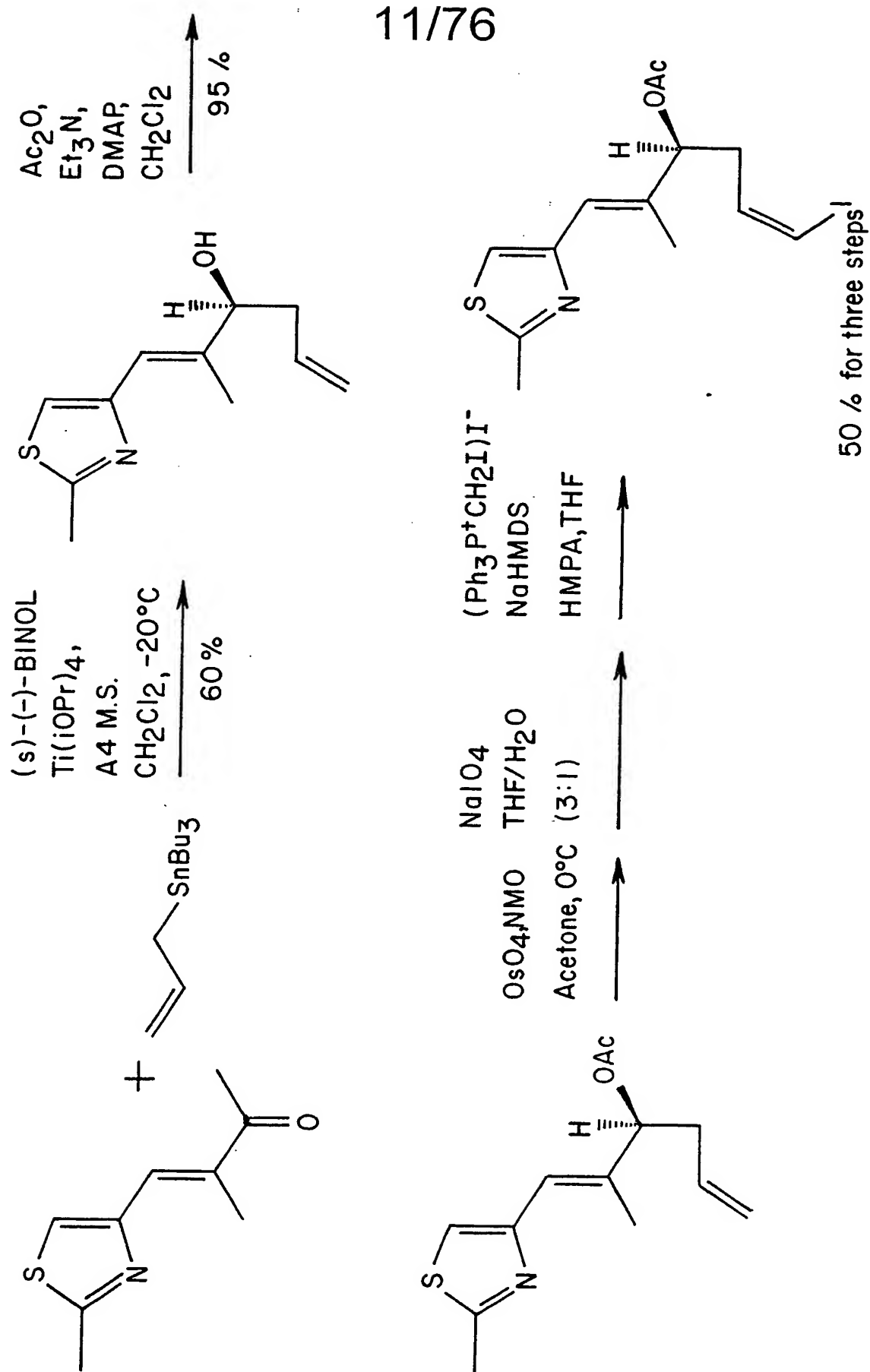


FIG. 5



**FIG. 6A**

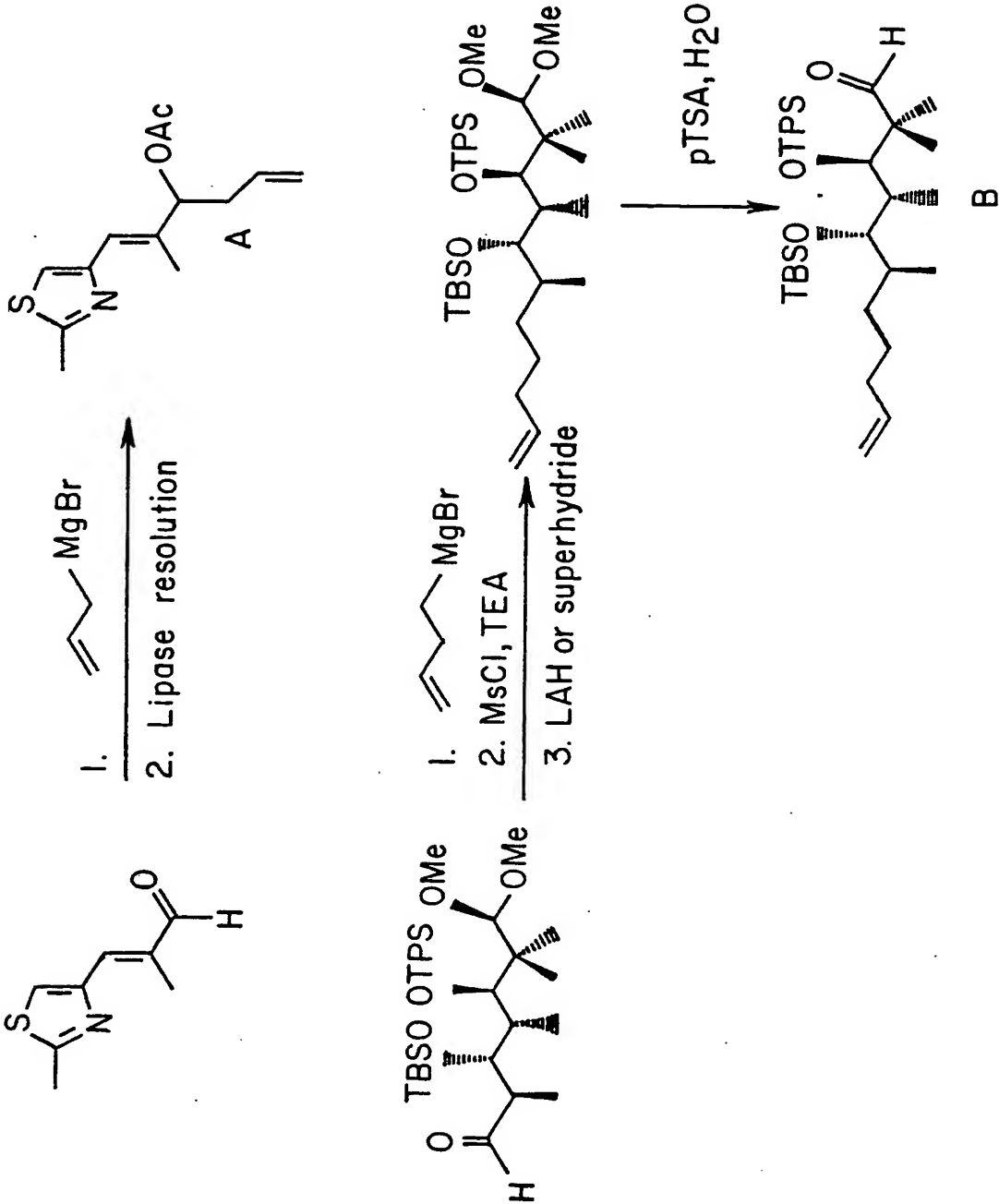
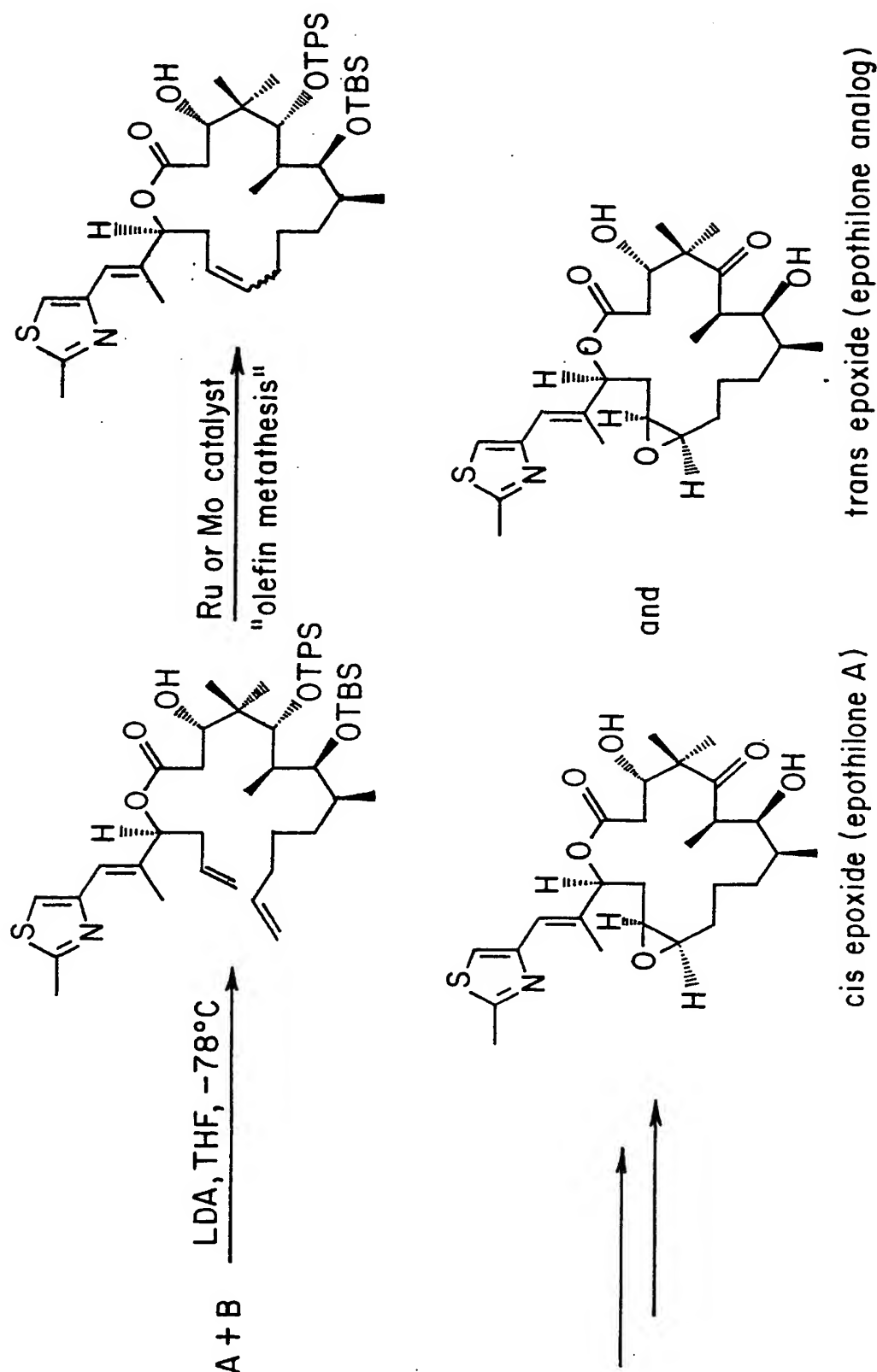
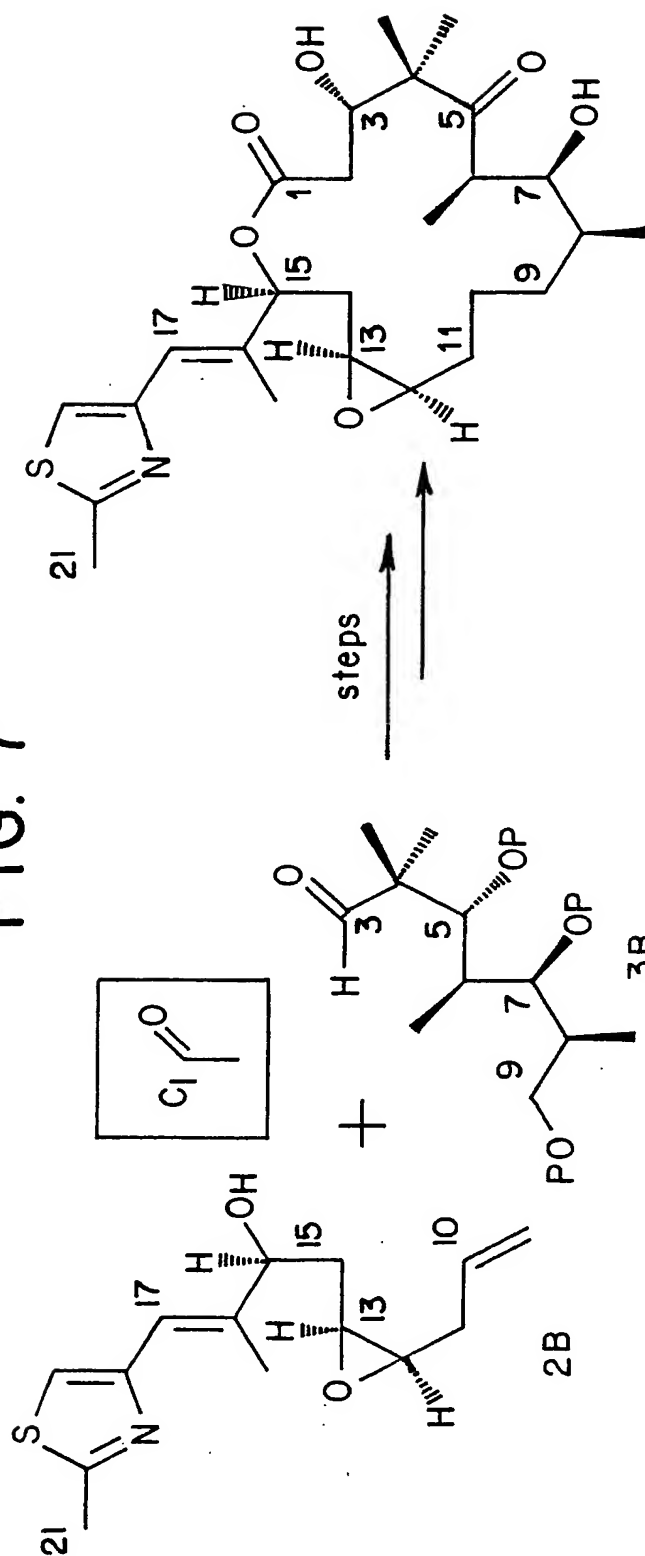


FIG. 6B



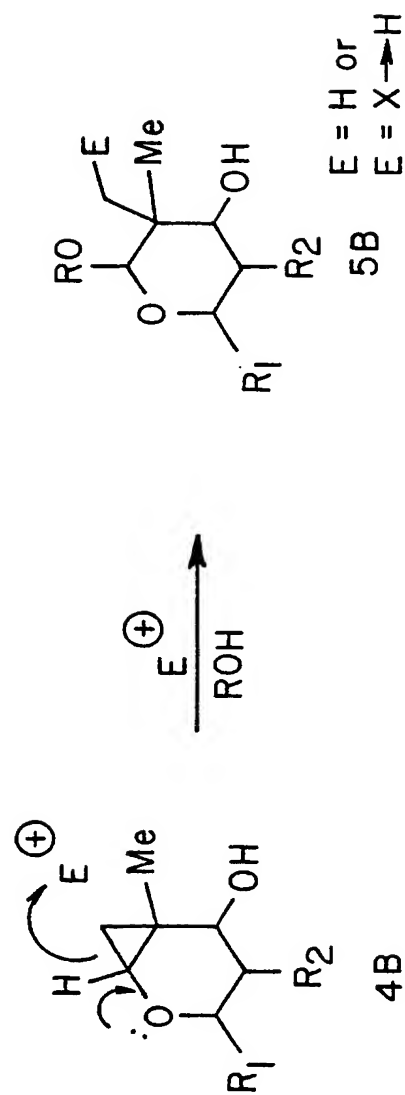
\*17 steps from known starting materials vs. 27 steps for aldol macrocyclization

FIG. 7



P=unspecified protecting group      1: epothilone A

Convergent strategy for a total synthesis of epothilone A (1).



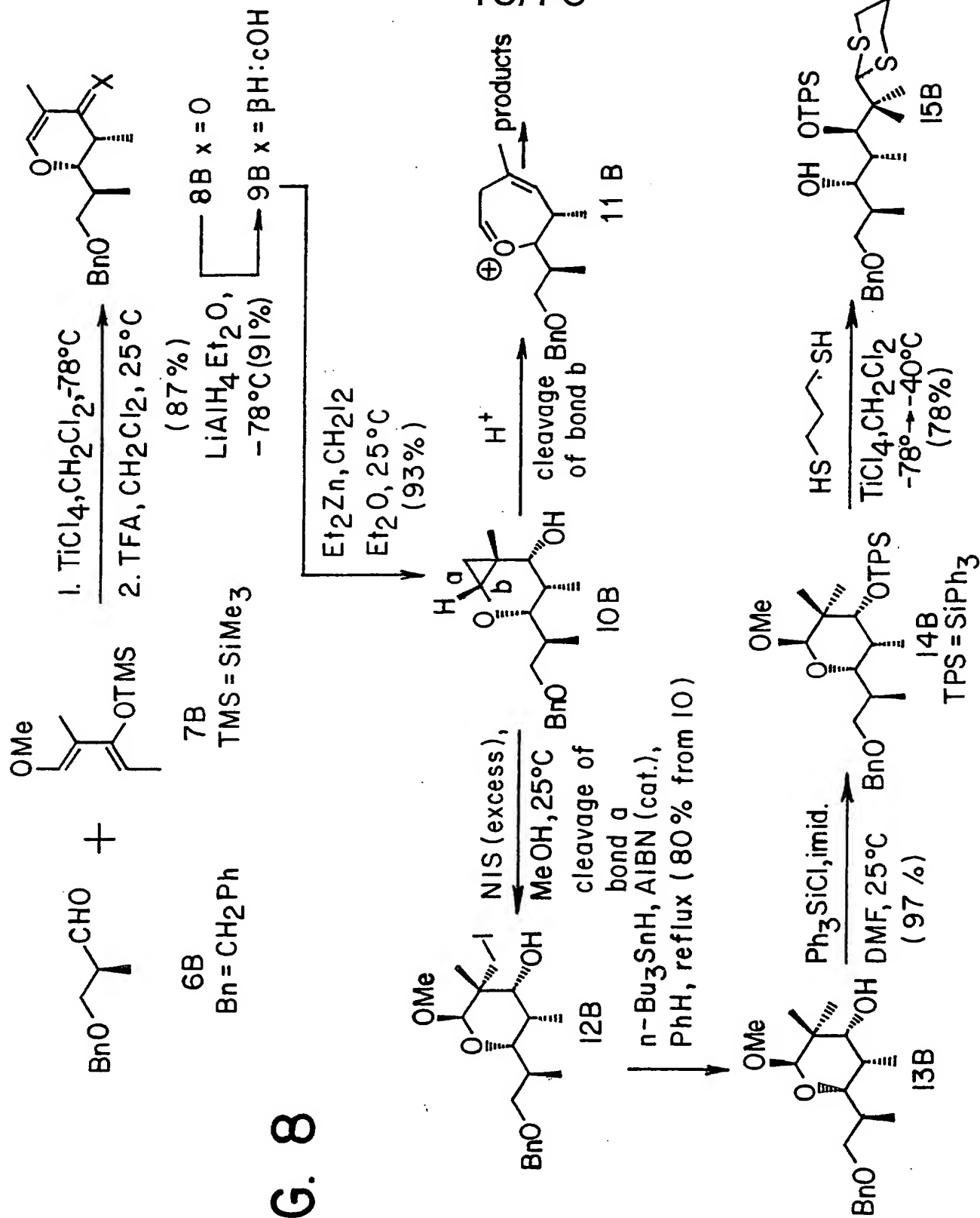
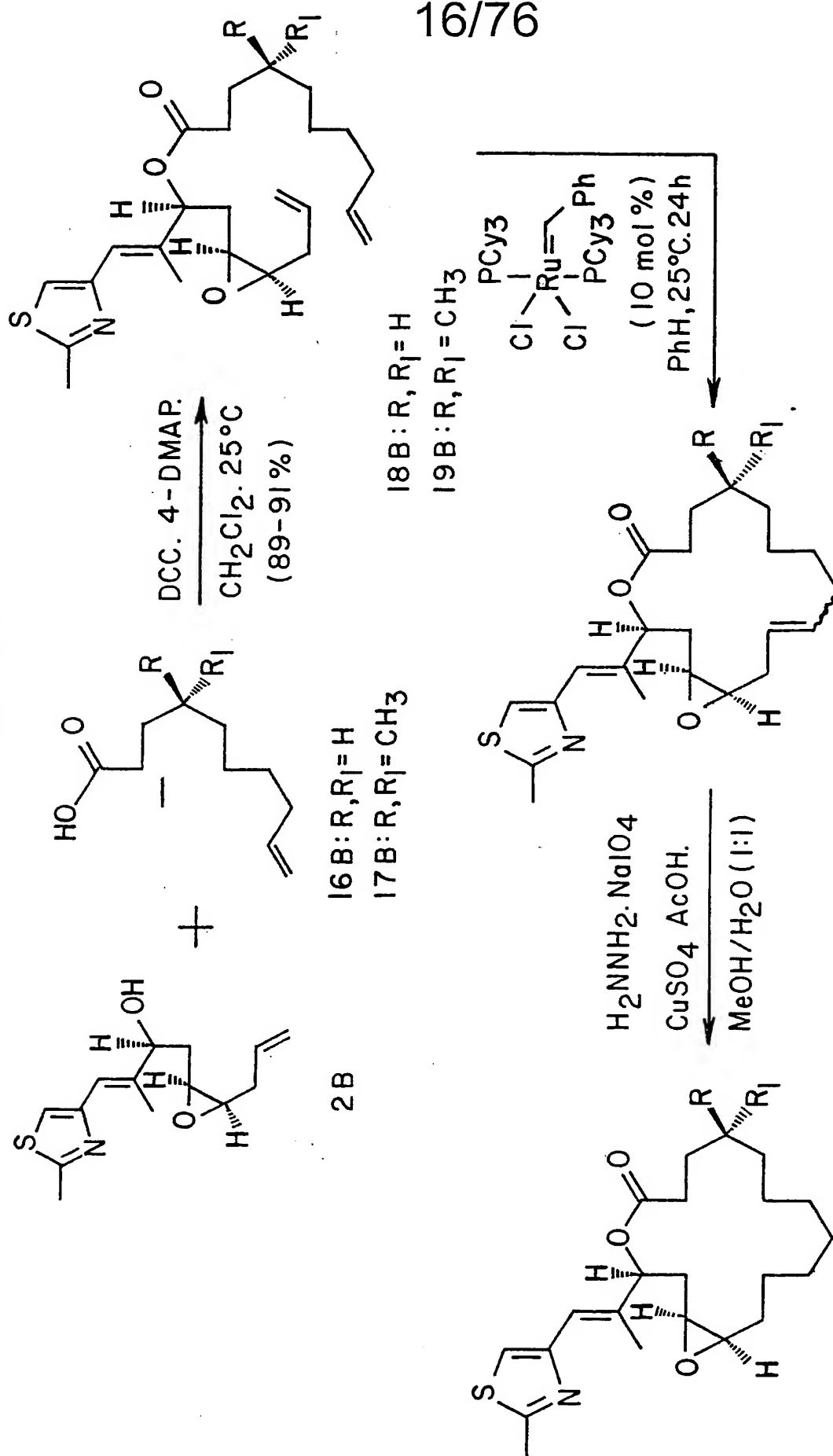


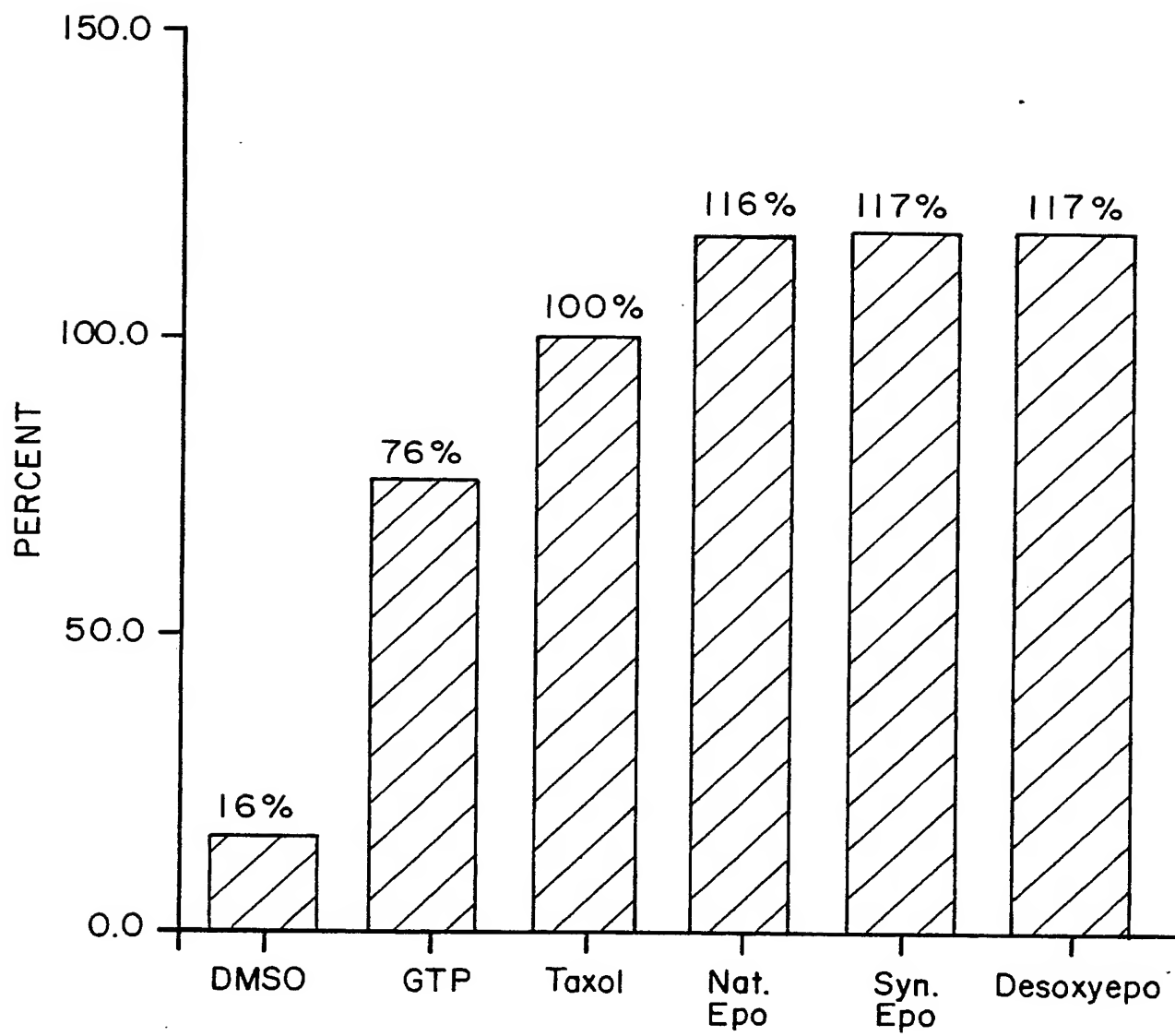
FIG. 8

FIG. 9



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FIG. 10



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FIG. II

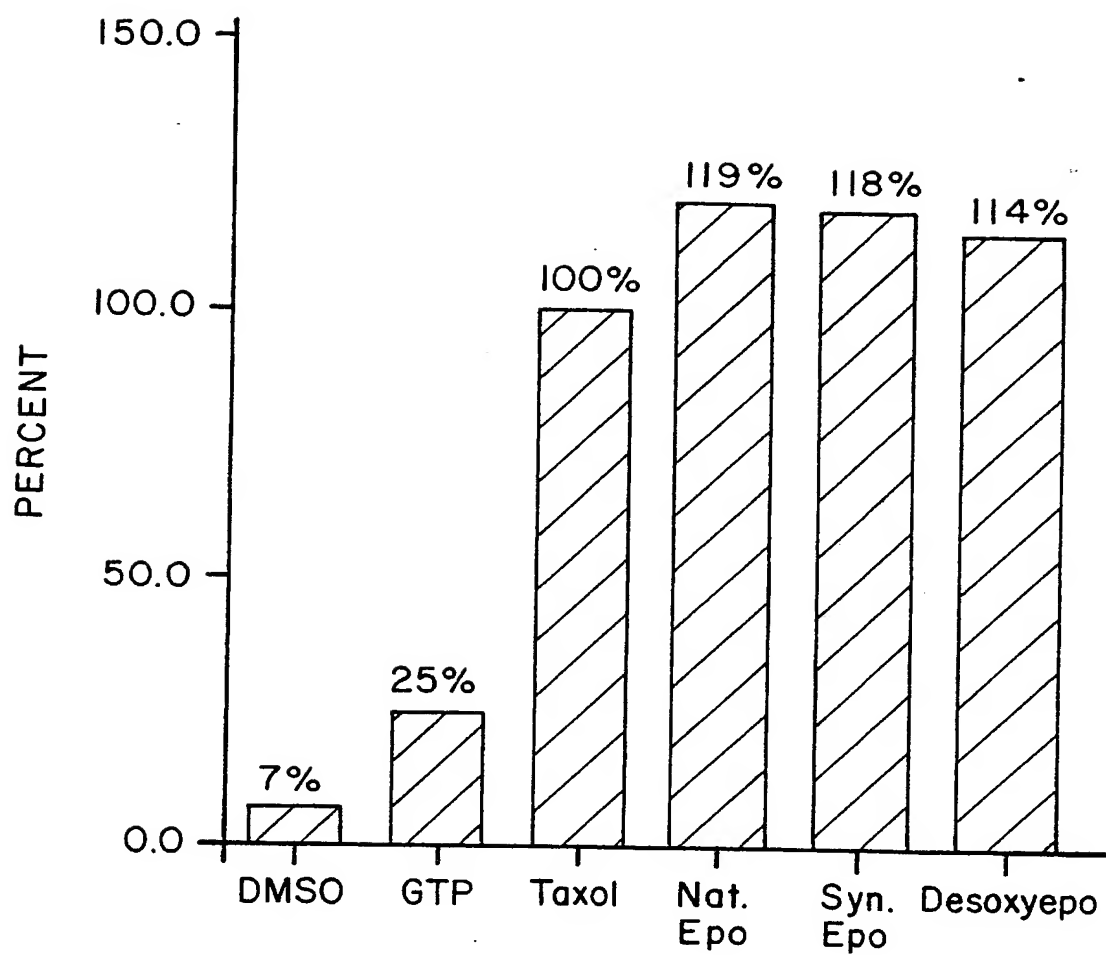


FIG. 13

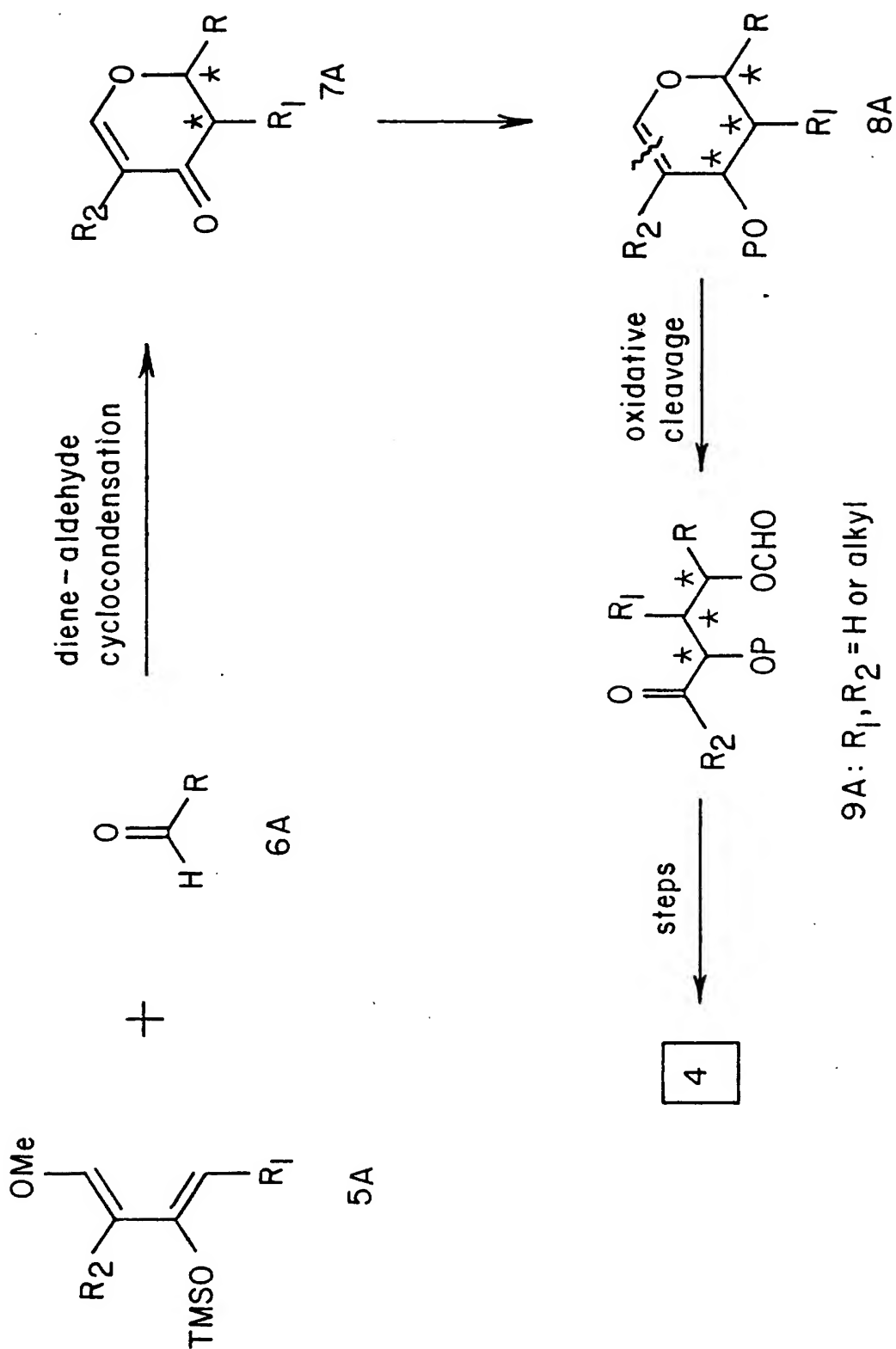
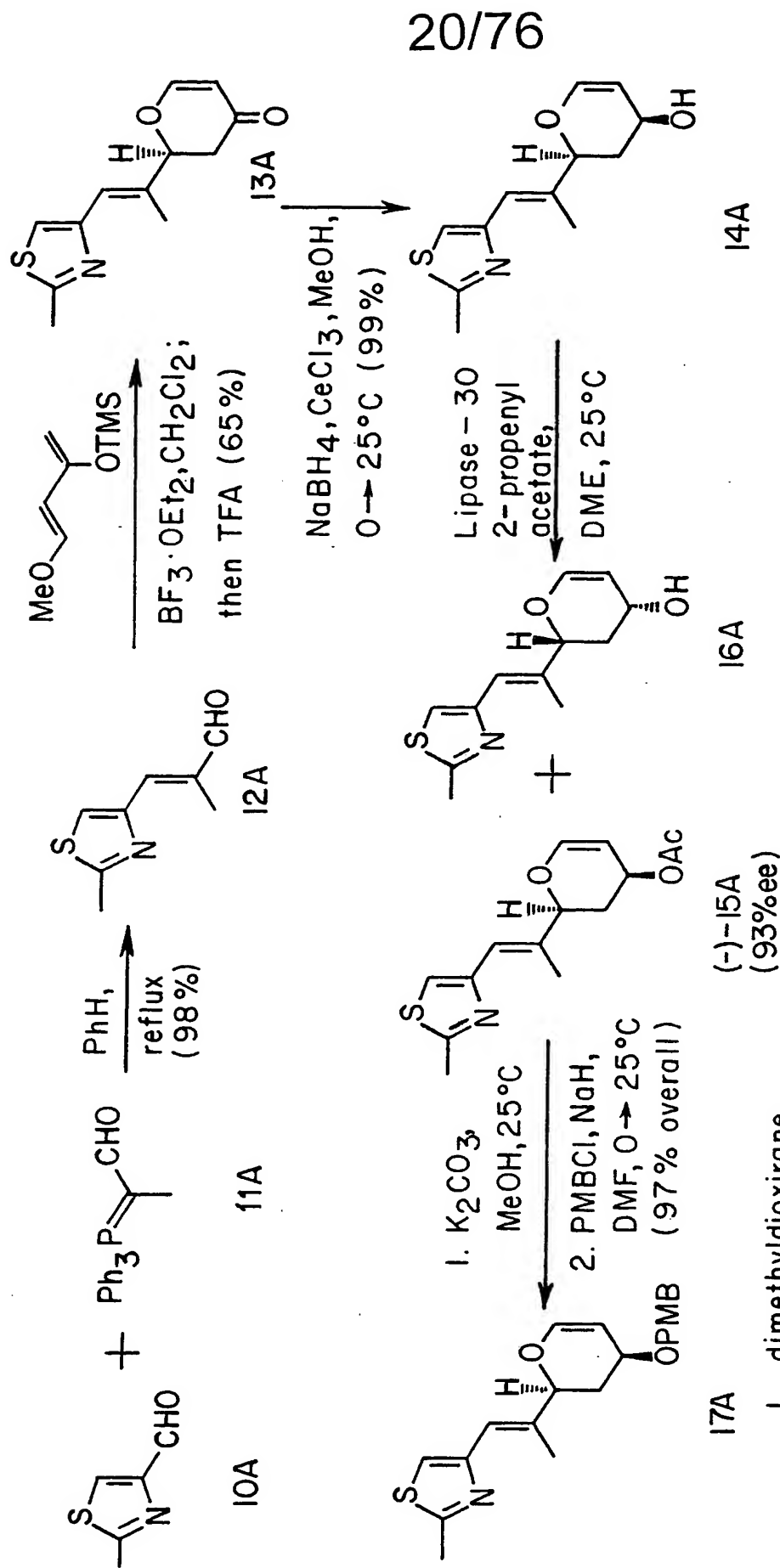


FIG. 14A



A ————— A

FIG. 14B

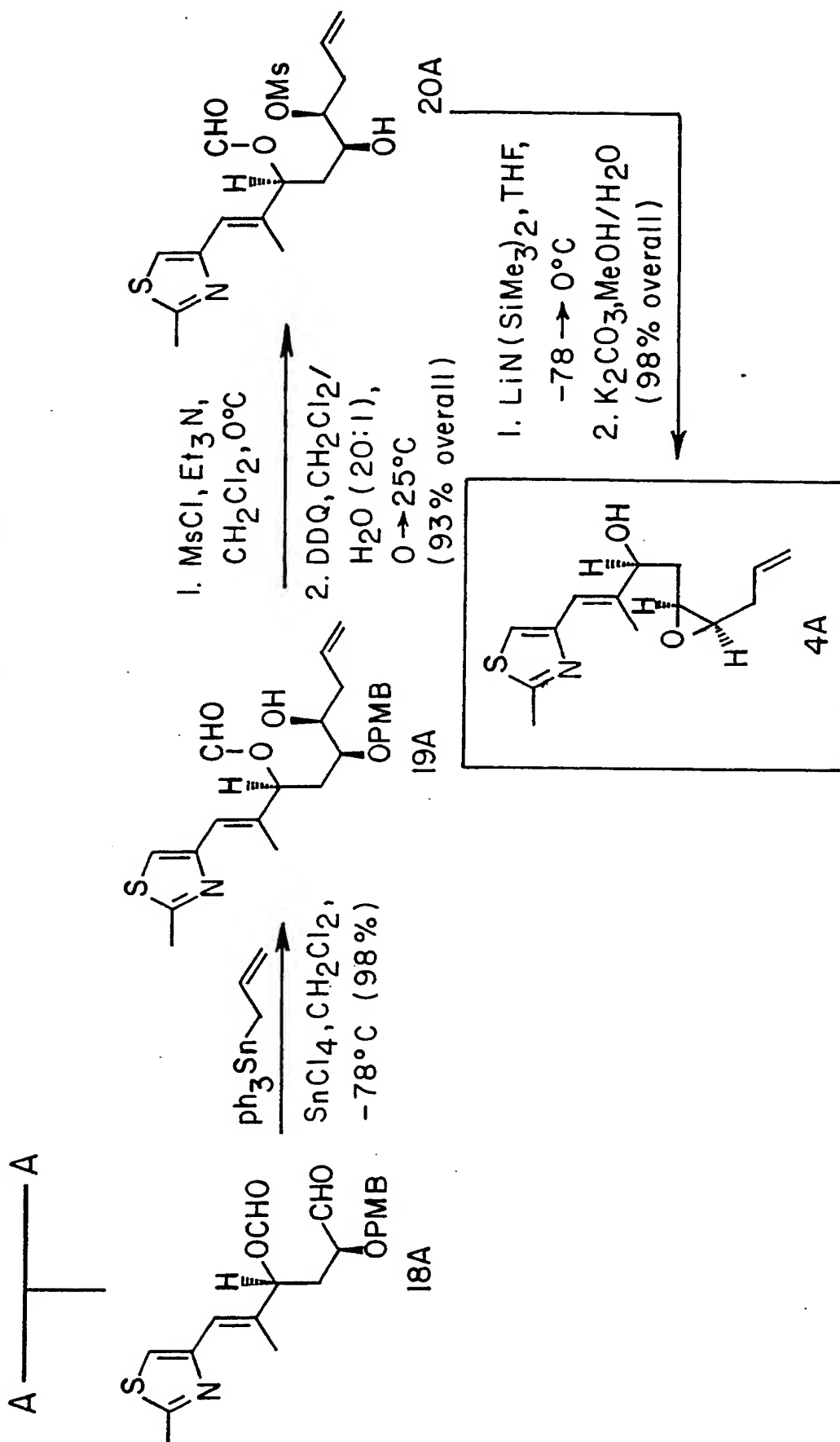


FIG. 15

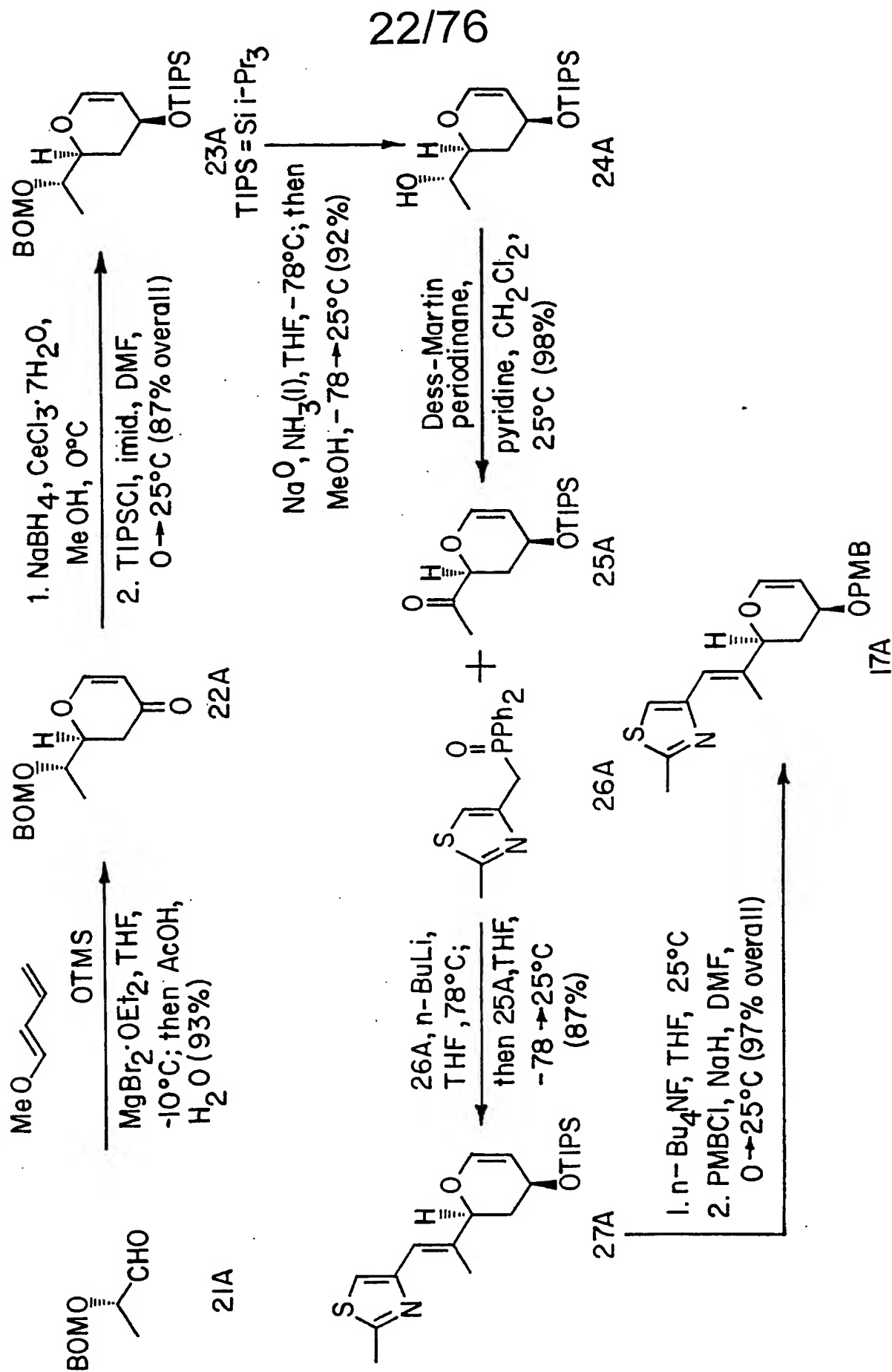


FIG. 16

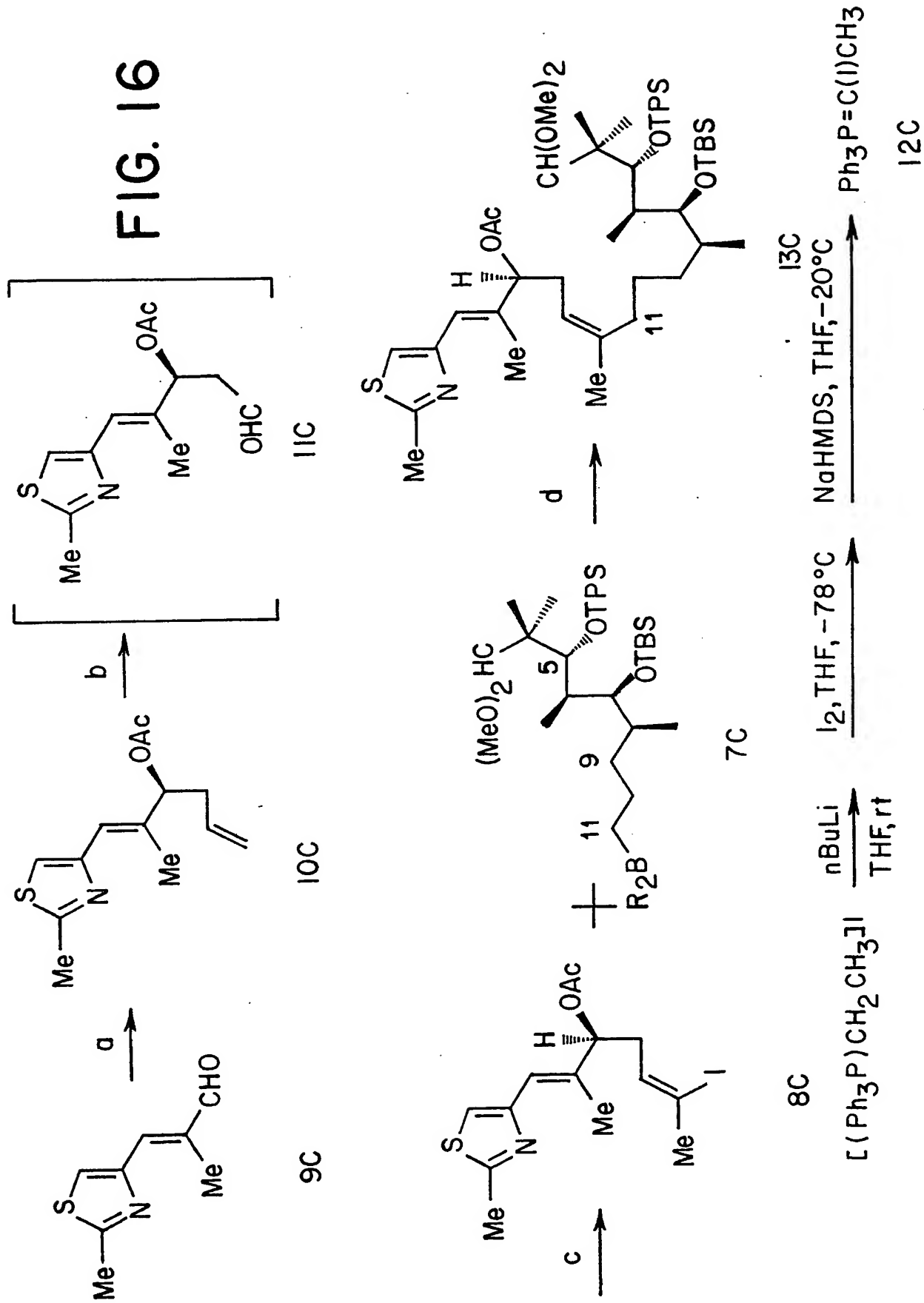
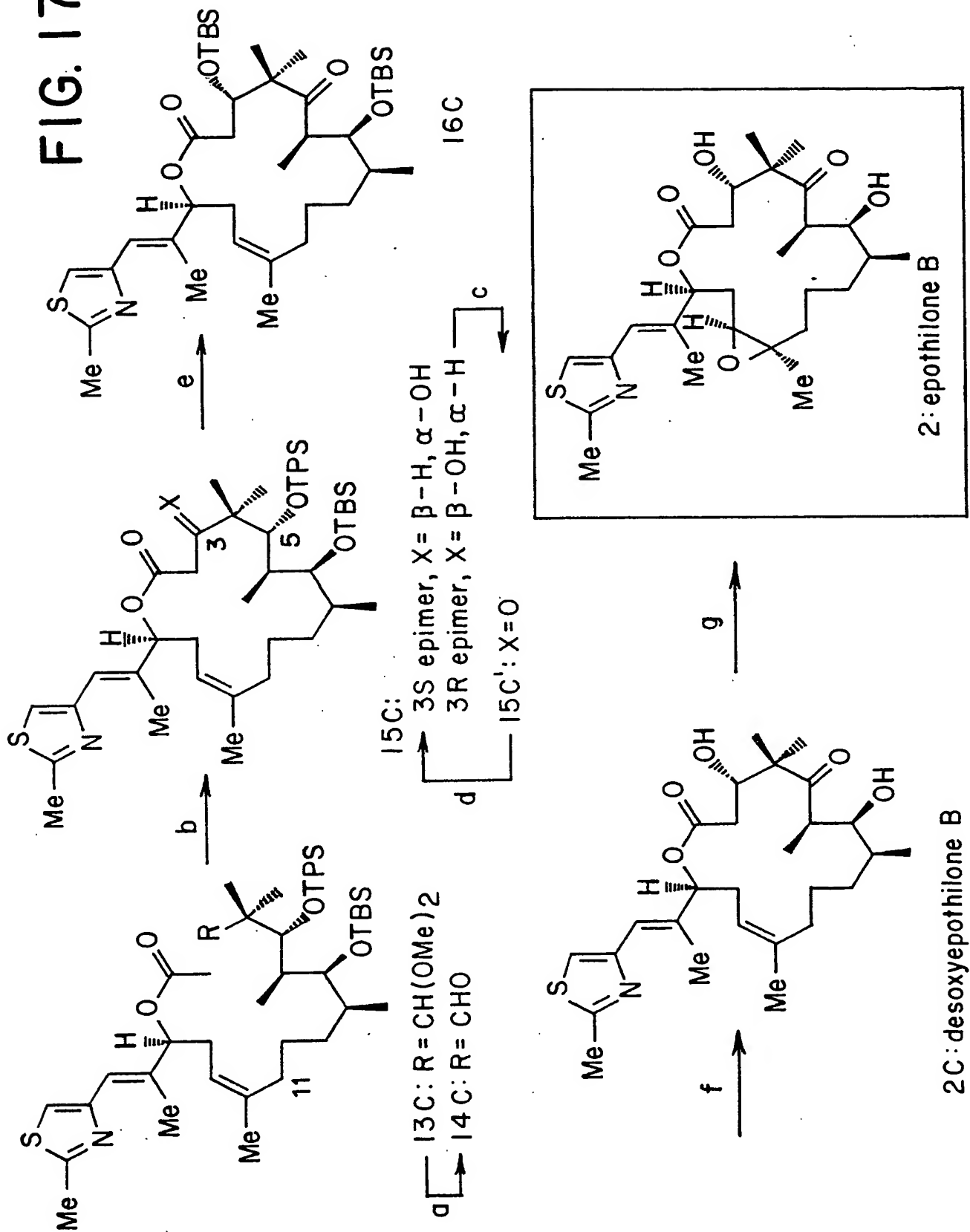


FIG. 17



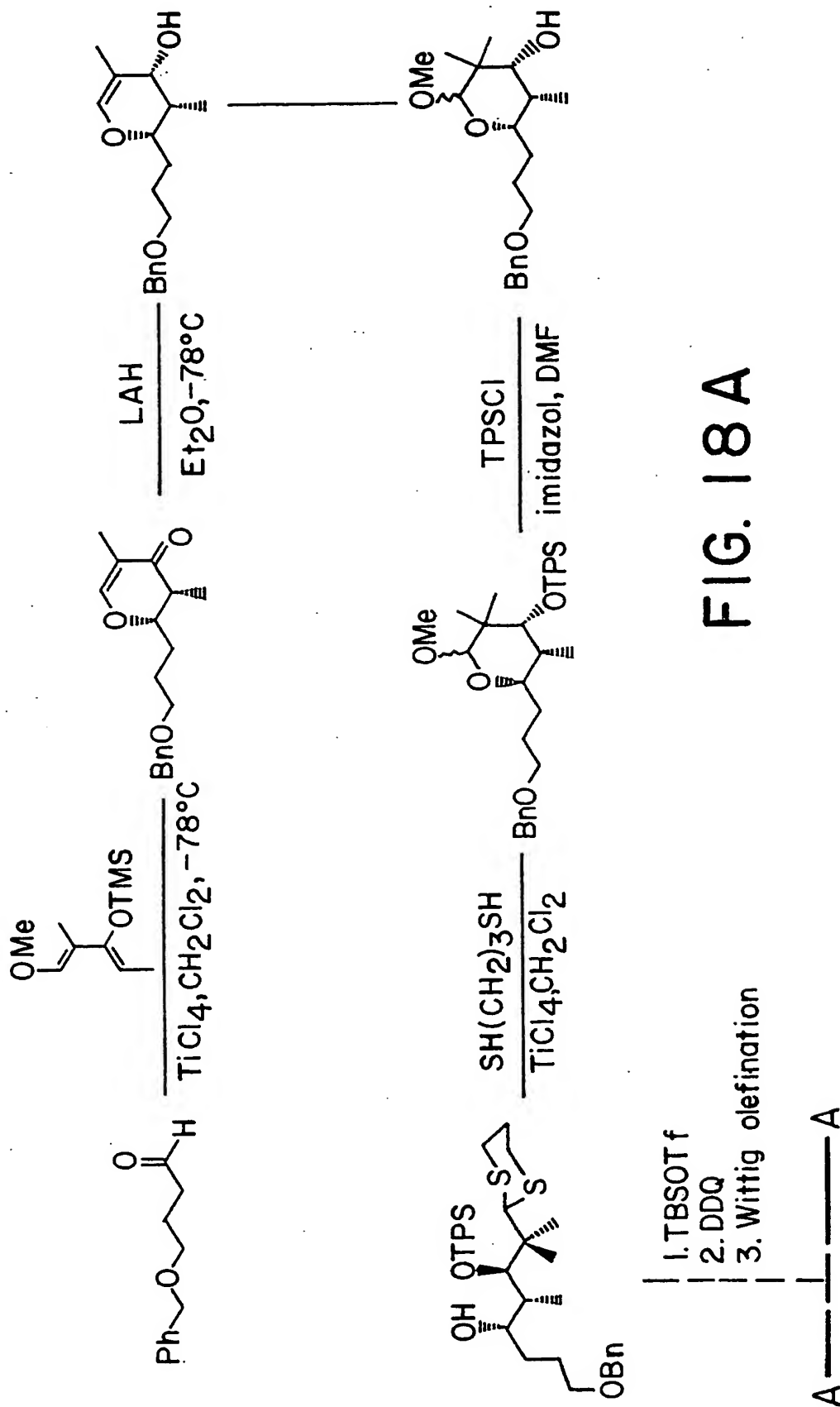


FIG. 18A





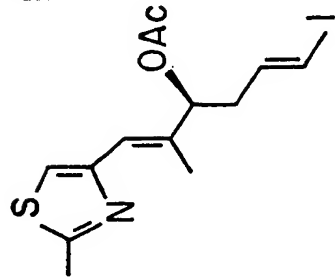


FIG. 19C

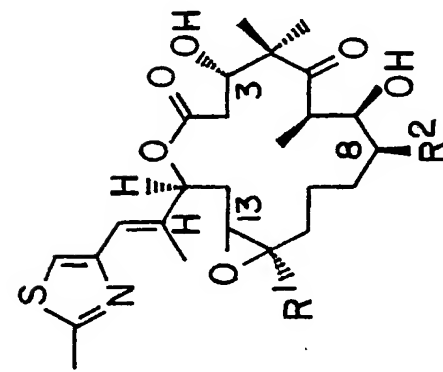
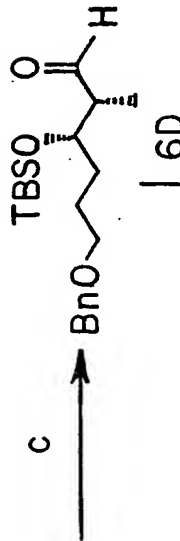
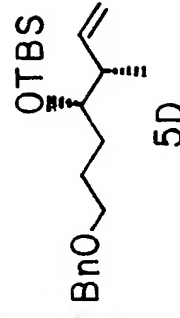
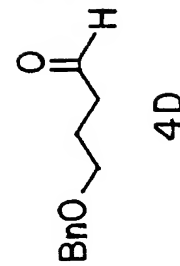


FIG. 20A

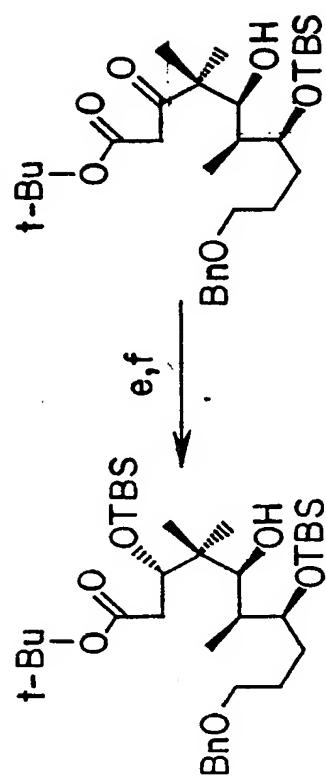
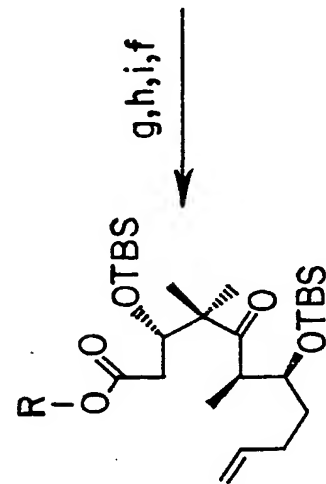
$R^1 = H, R^2 = Me$ ; epothilone A  
 $R^1 = R^2 = Me$ ; epothilone B

$R^1 = R^2 = H$ ; Cg-desmethyl-epothilone A (3D)



TBS = Sit-buMe<sub>2</sub>

FIG. 20B



9D # R = t-butyl  
 10D # R = TBS

7D

8D

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FIG. 21

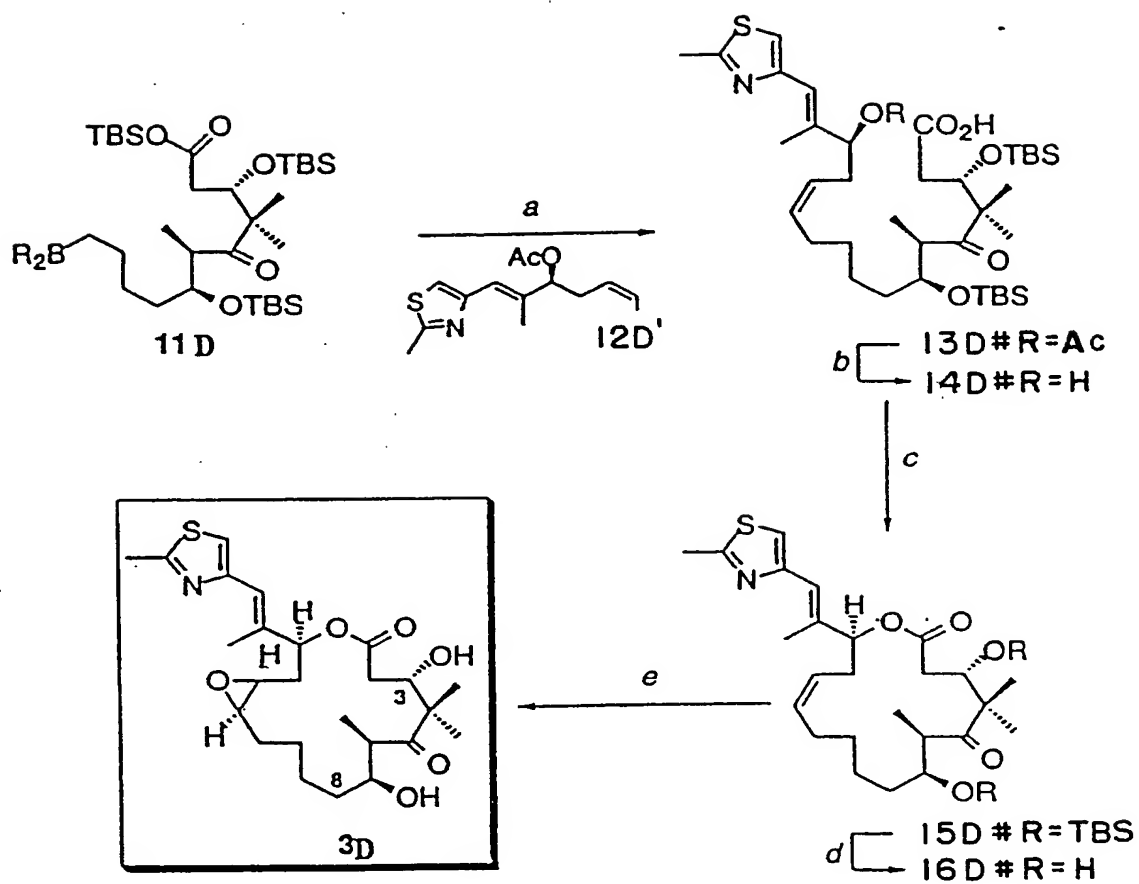


FIG. 22A

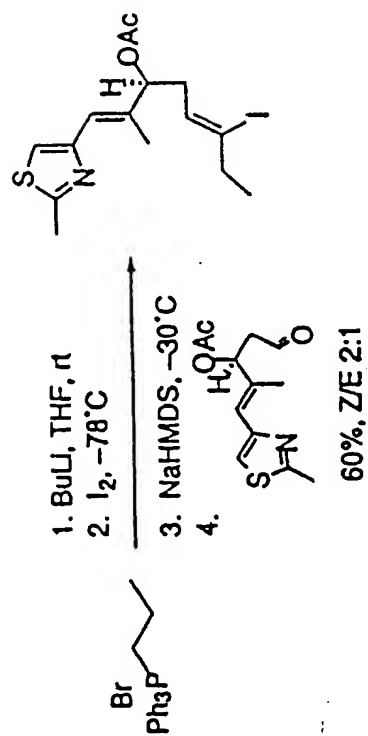


FIG. 22B

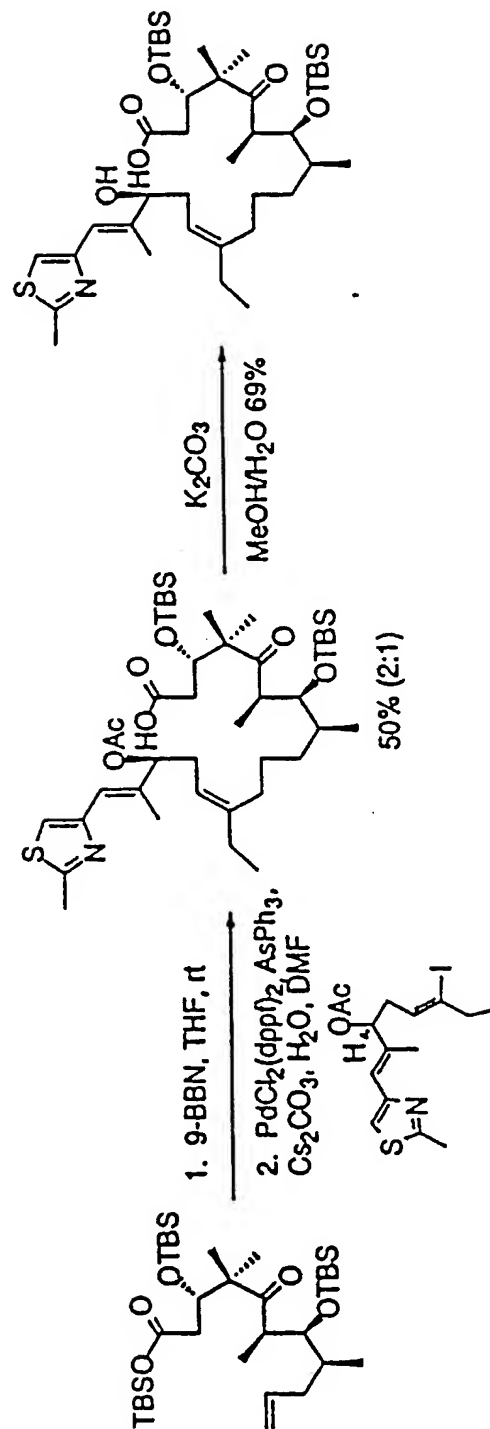


FIG. 22C

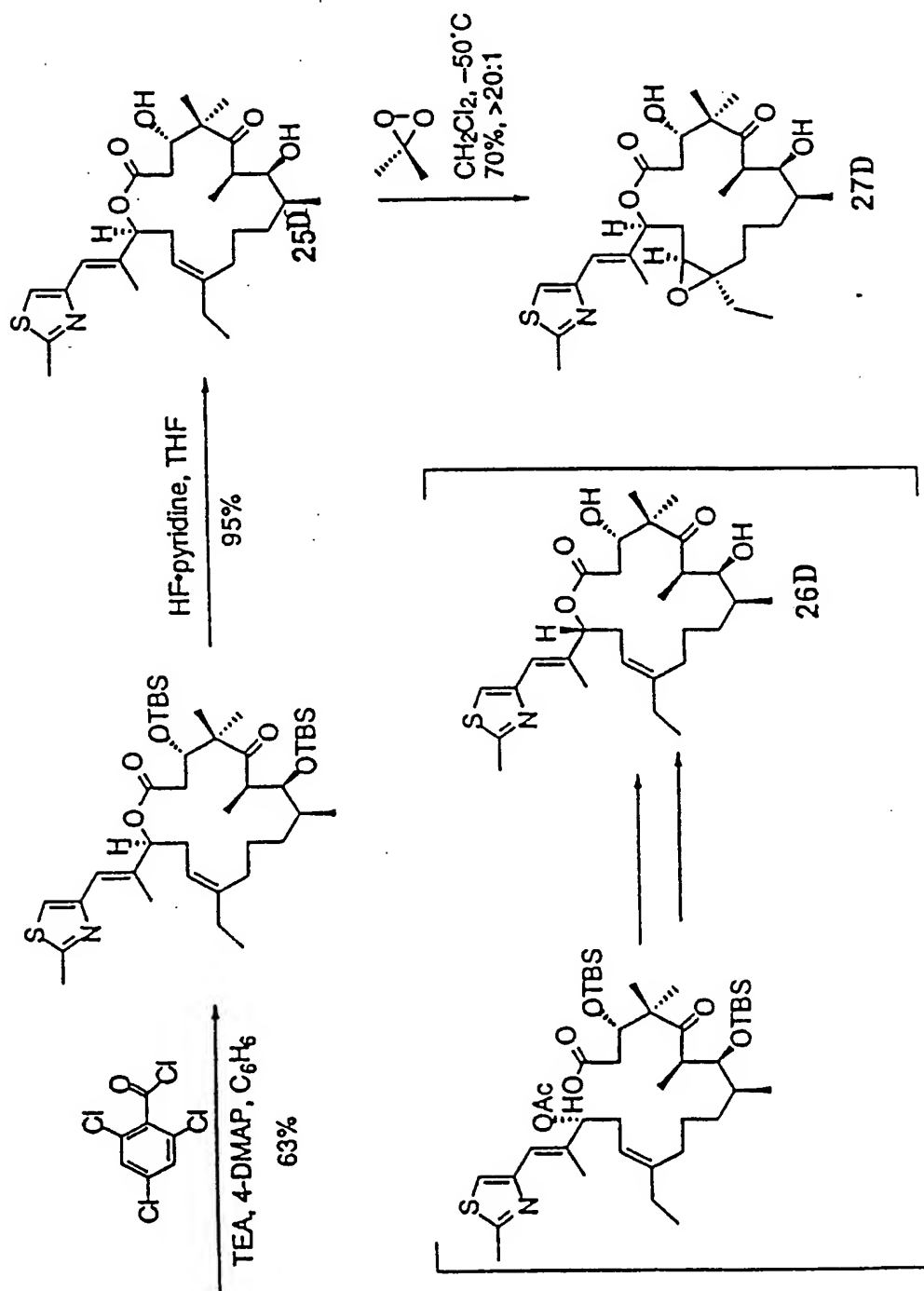
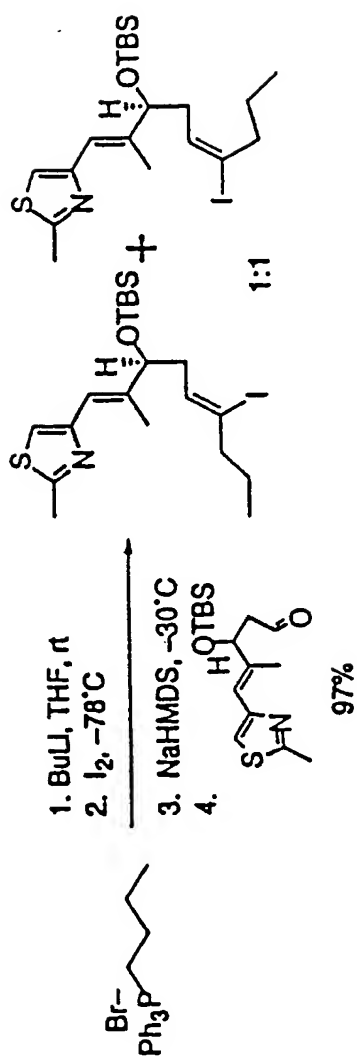


FIG. 23A



**FIG. 23B**

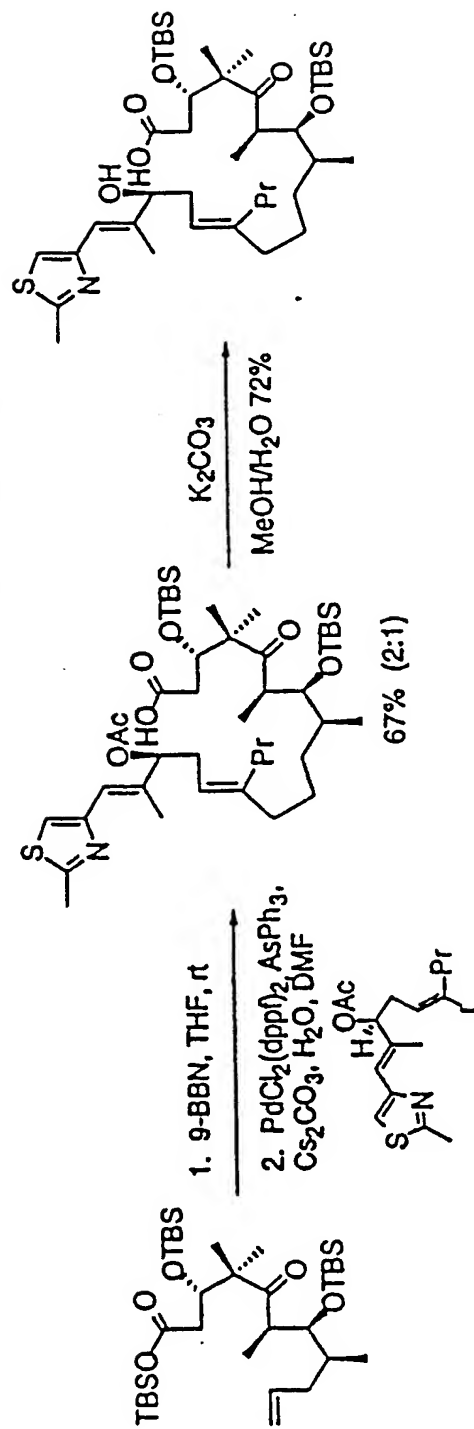


FIG. 23C

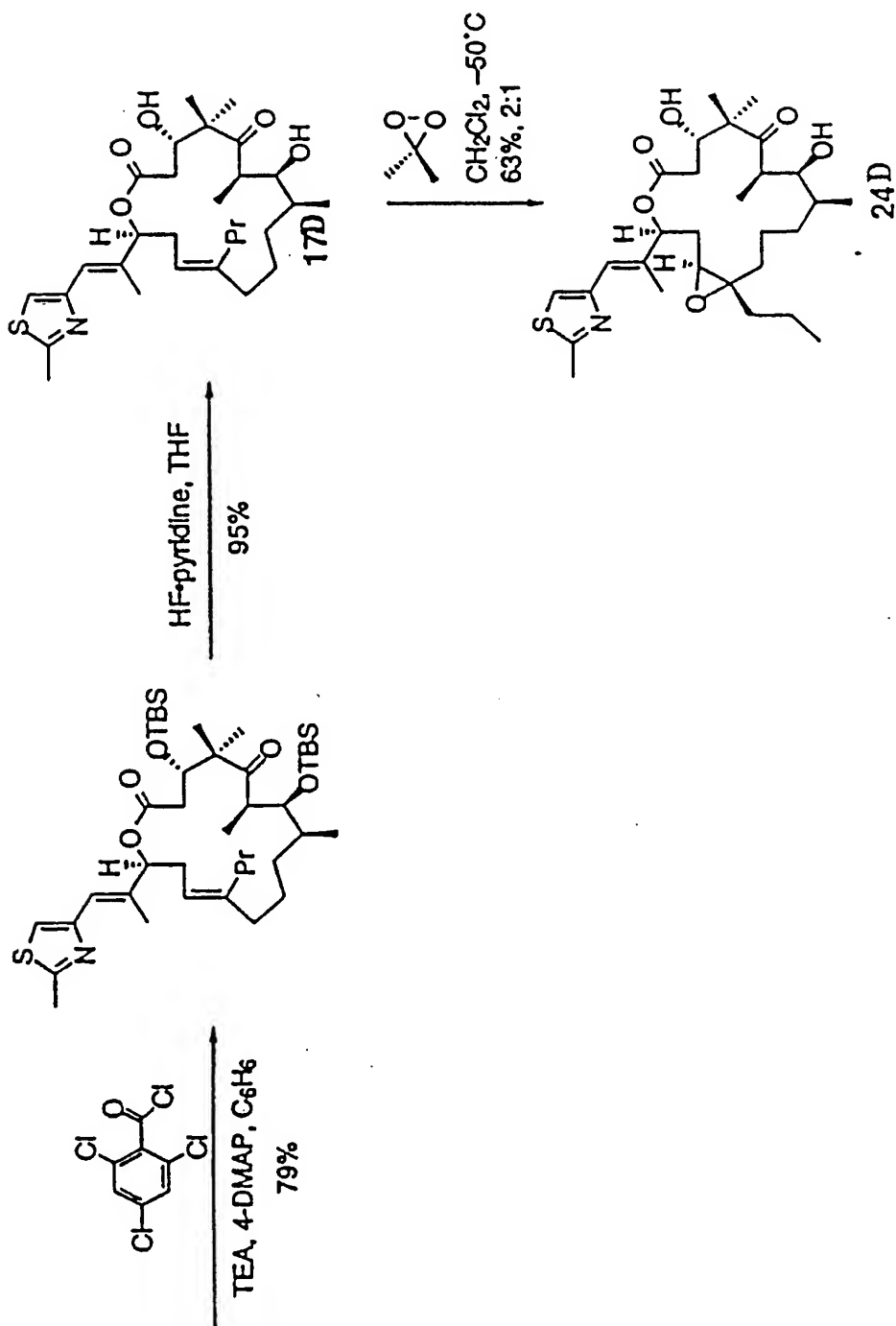
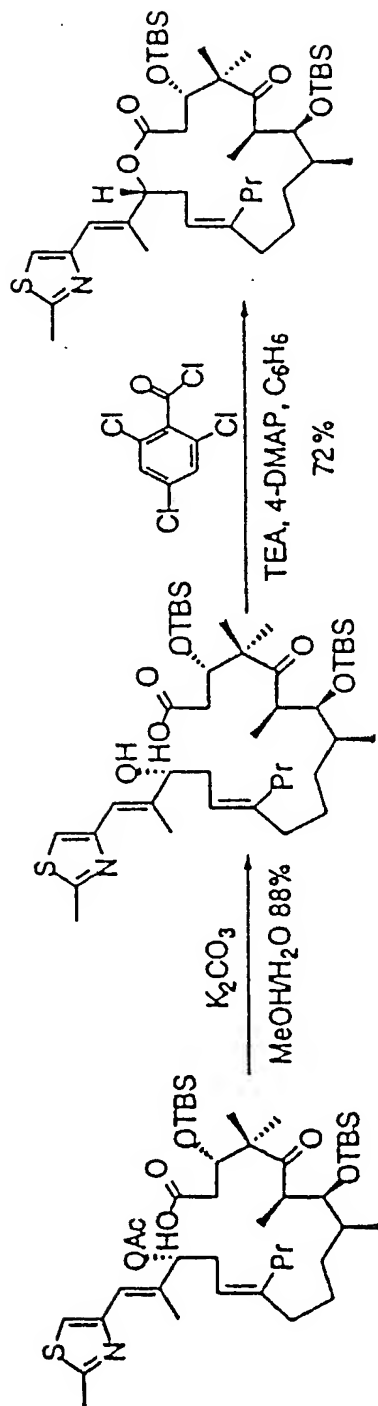


FIG. 24A



minor product from suzuki  
coupling reaction

FIG. 24B

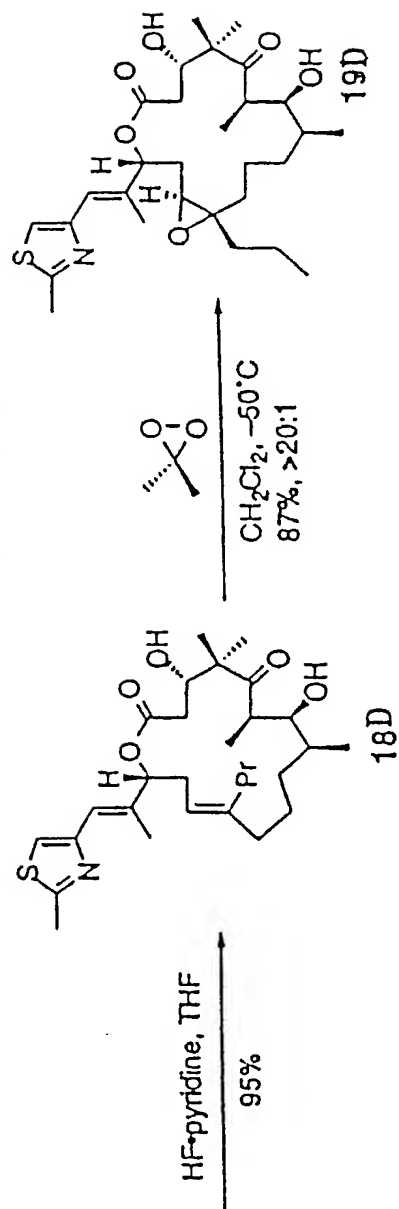


FIG. 25A

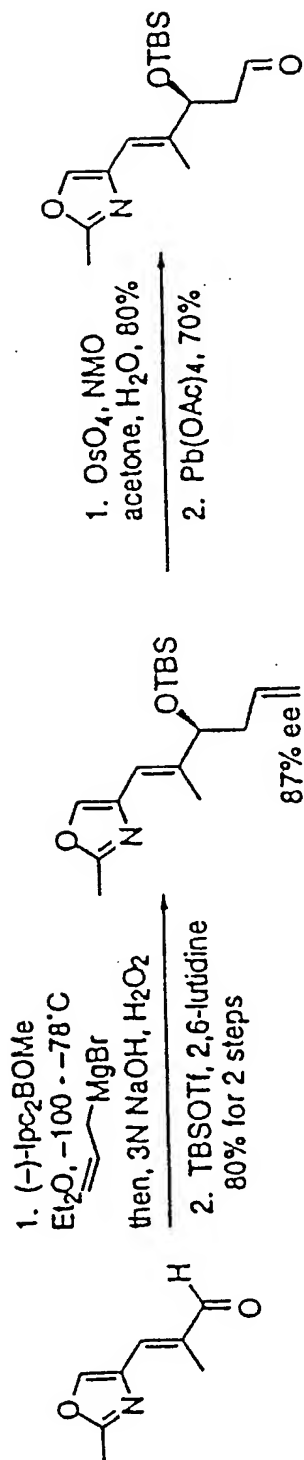


FIG. 25B

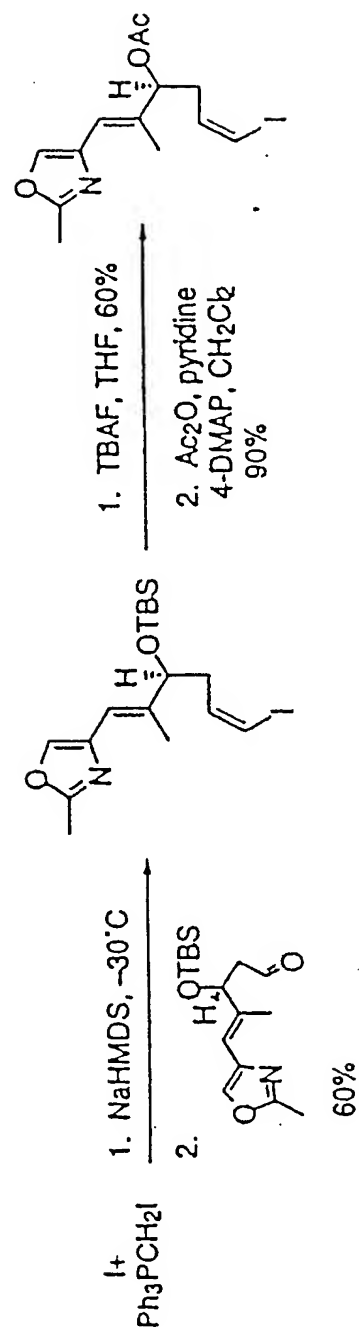


FIG. 25C

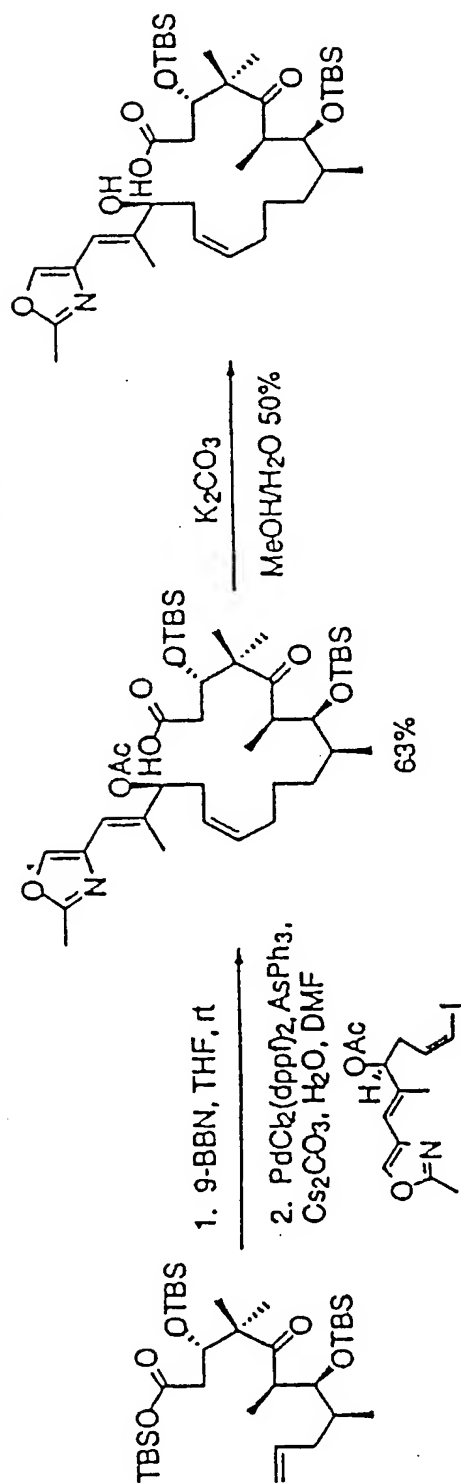


FIG. 25D

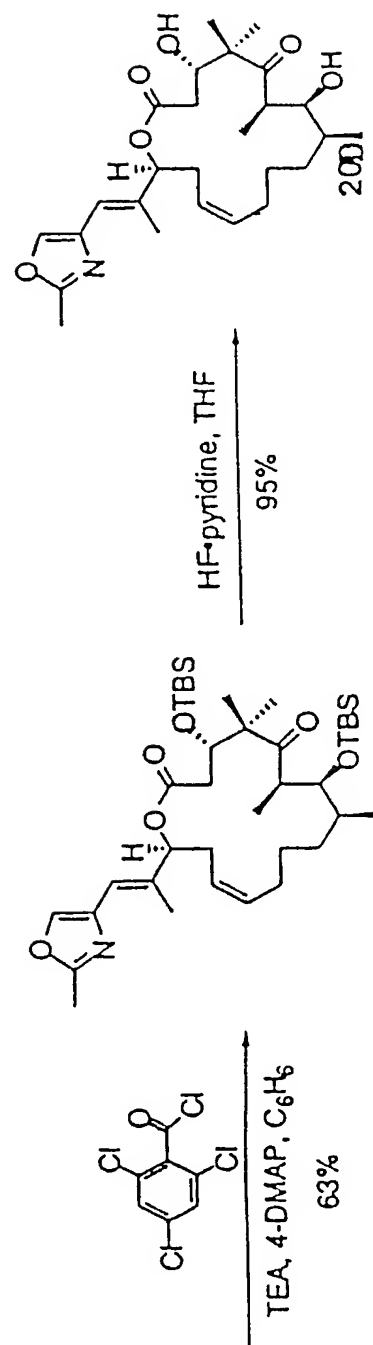


FIG. 26A

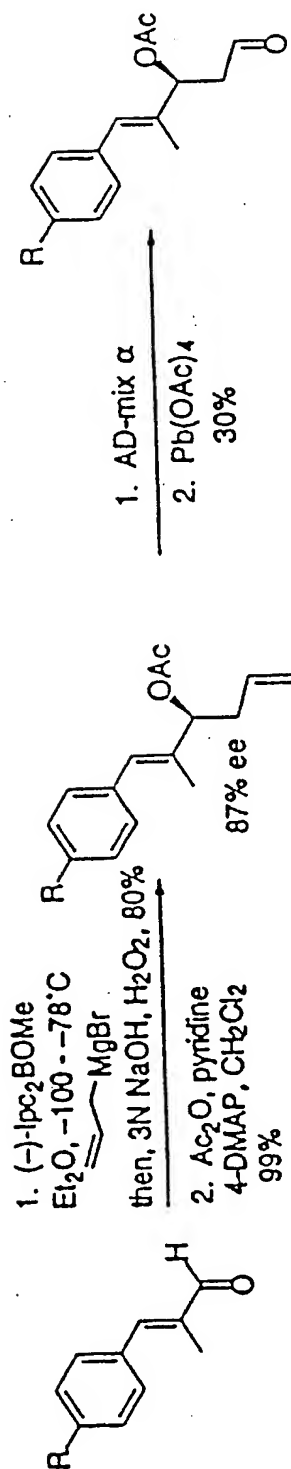
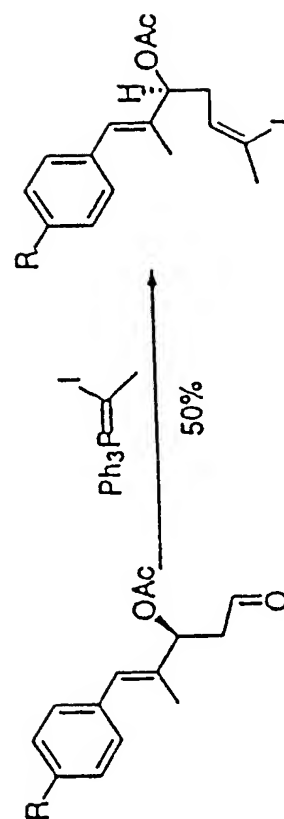


FIG. 26B



R = H, F, CF<sub>3</sub>,  
 R=H is the only compound  
 completed, F and CF<sub>3</sub> are nearly  
 completed

FIG. 26C

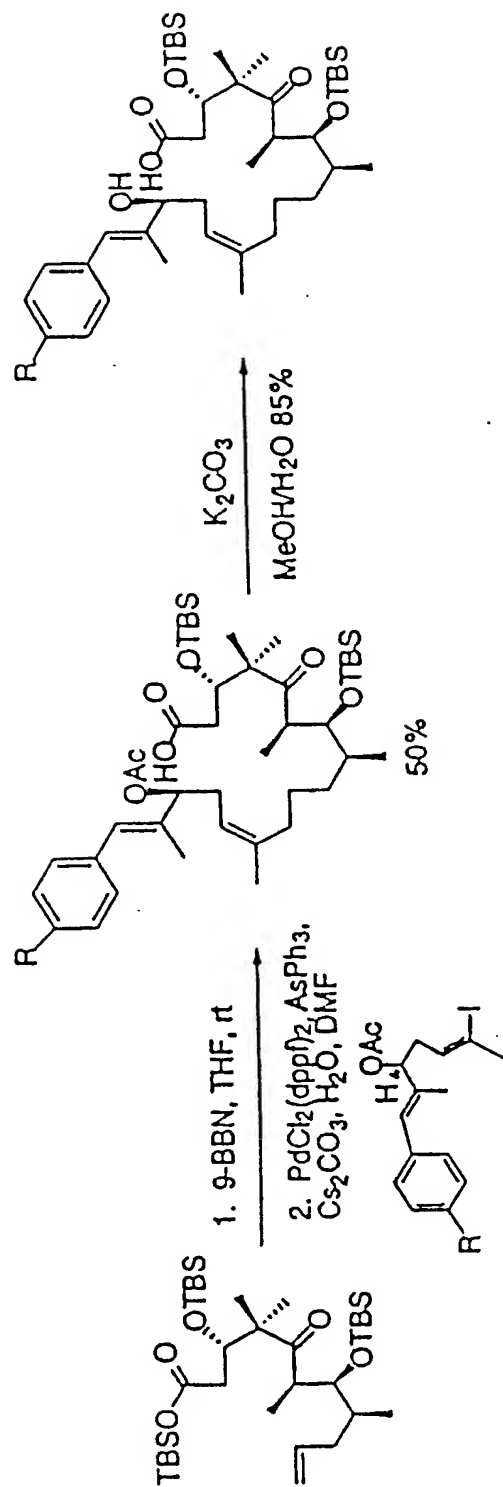


FIG. 26D

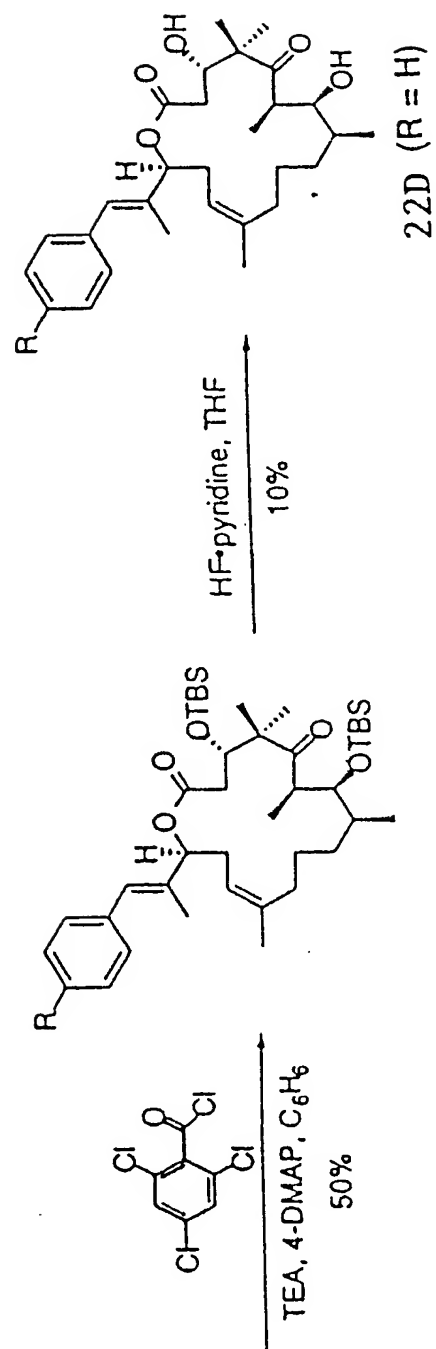


FIG. 27A

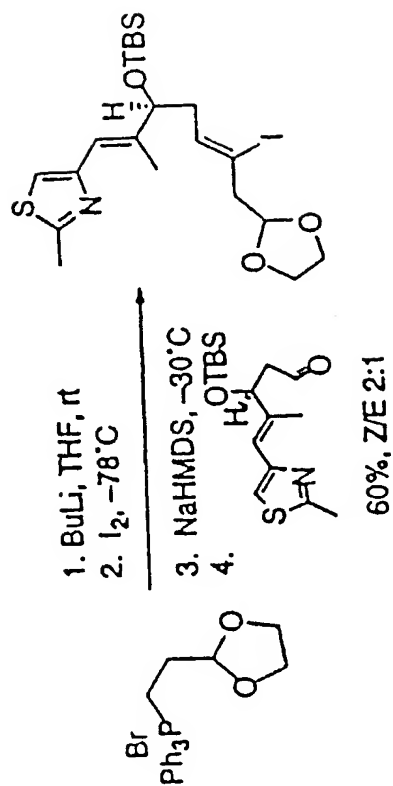


FIG. 27B

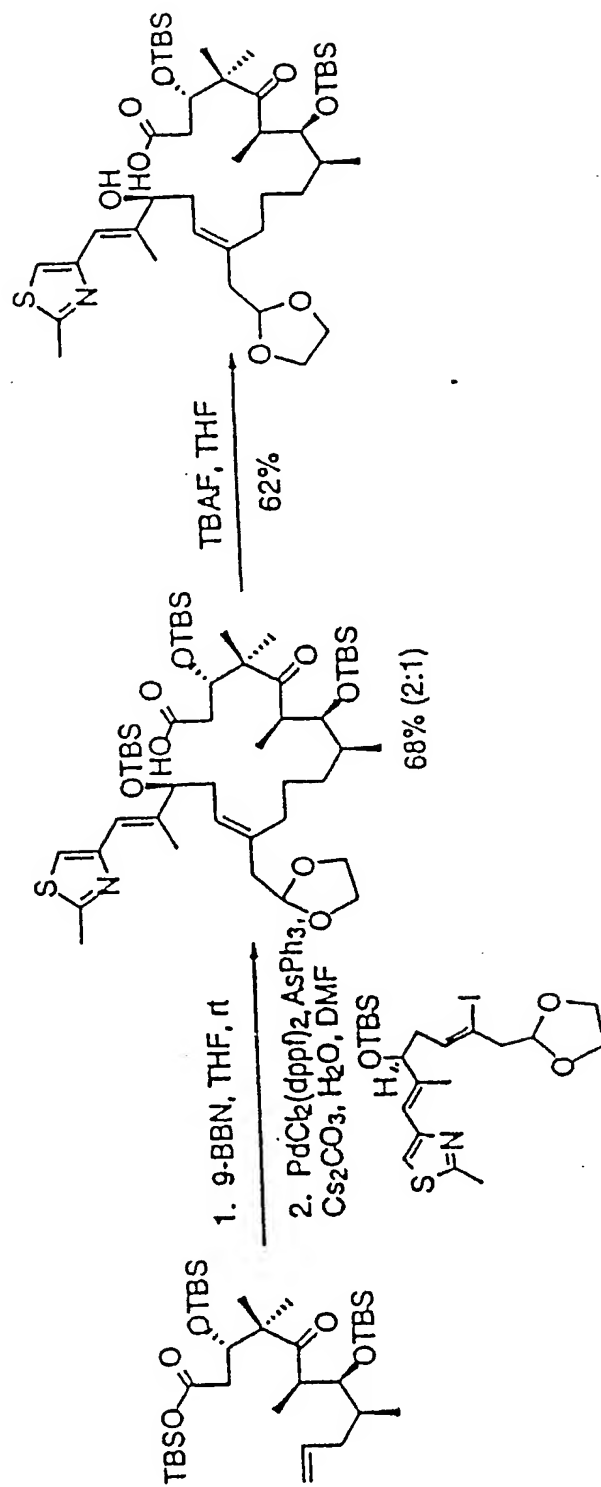
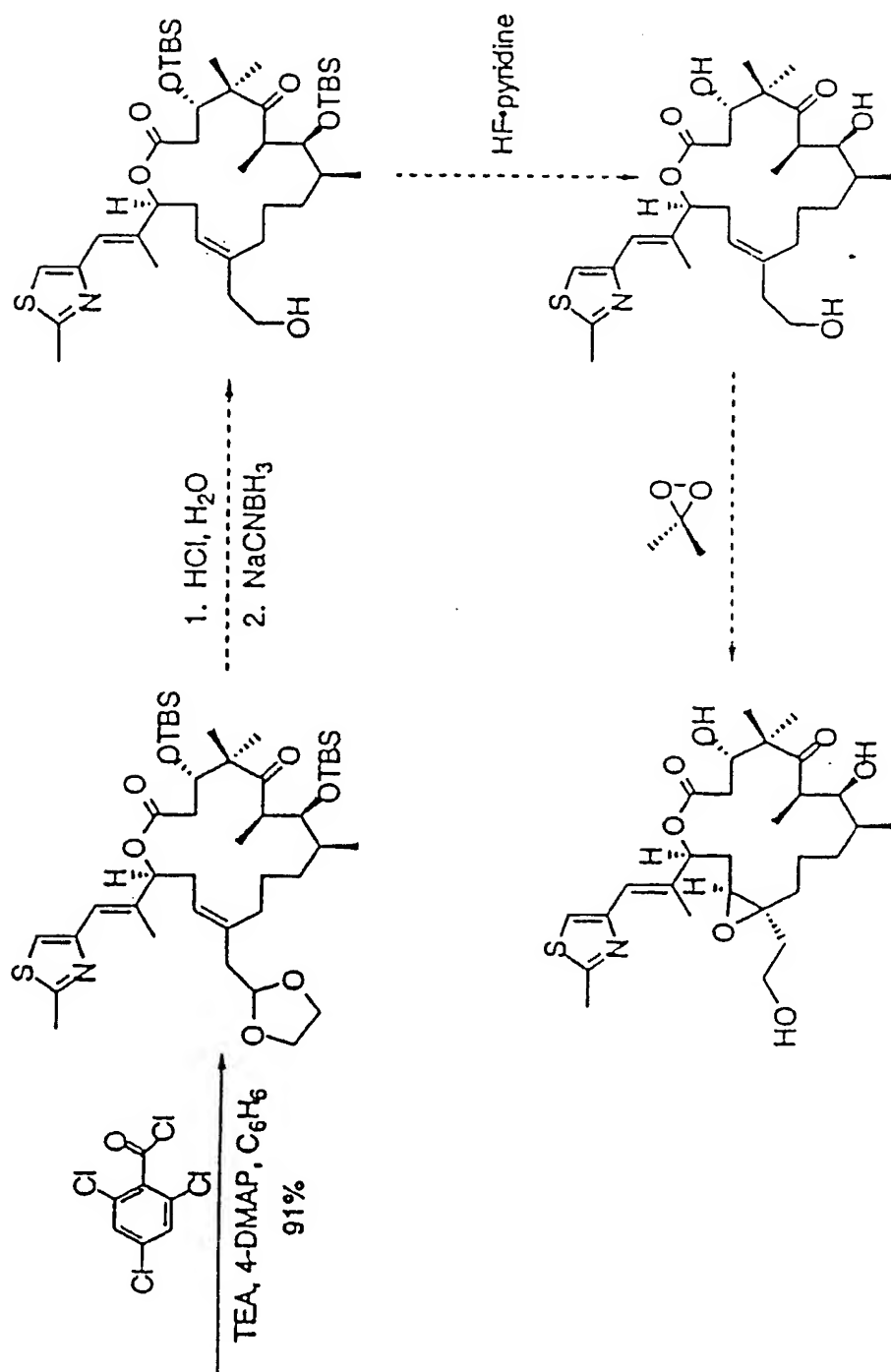
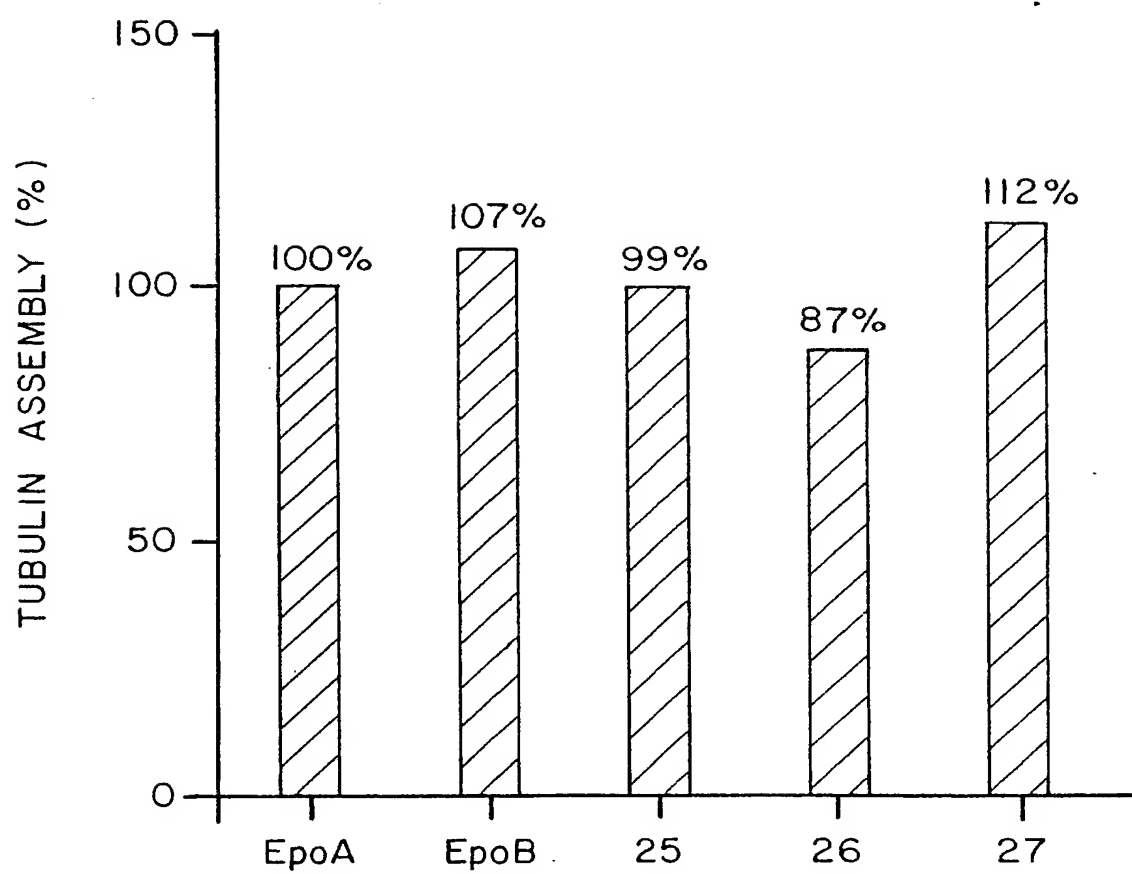


FIG. 27C



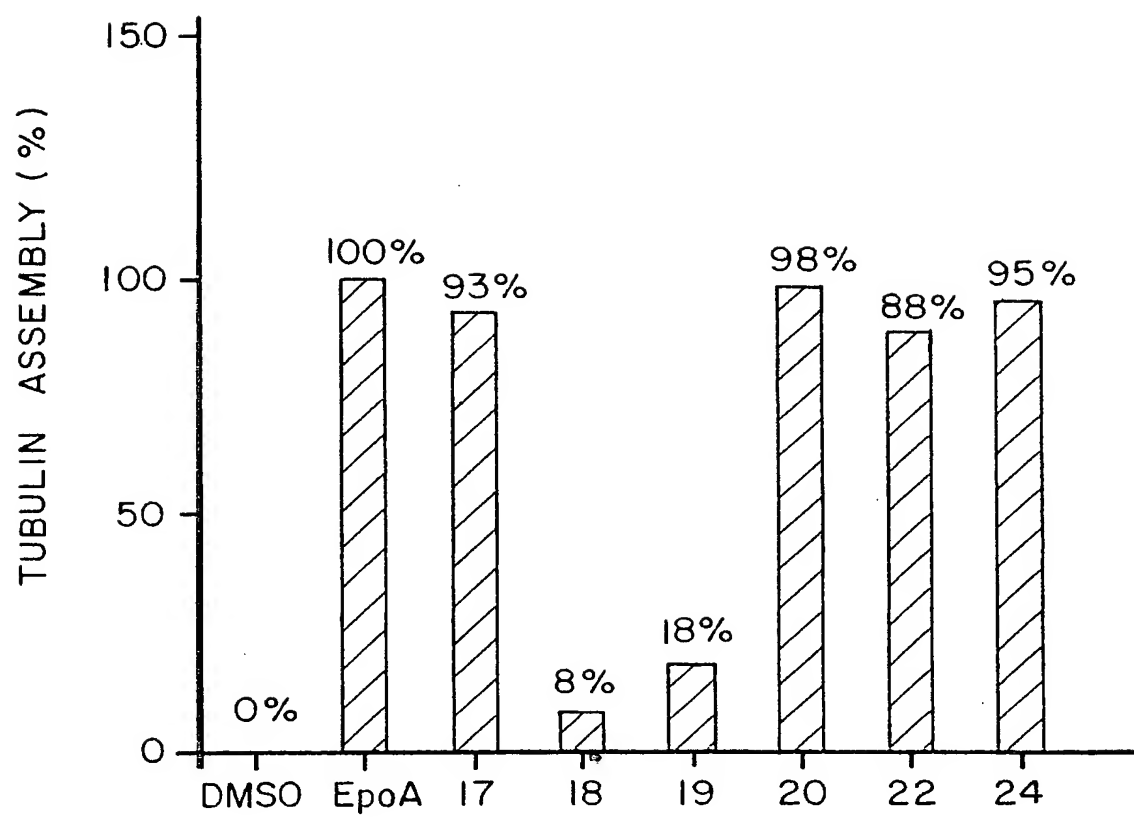
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FIG. 28A



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FIG. 28 B



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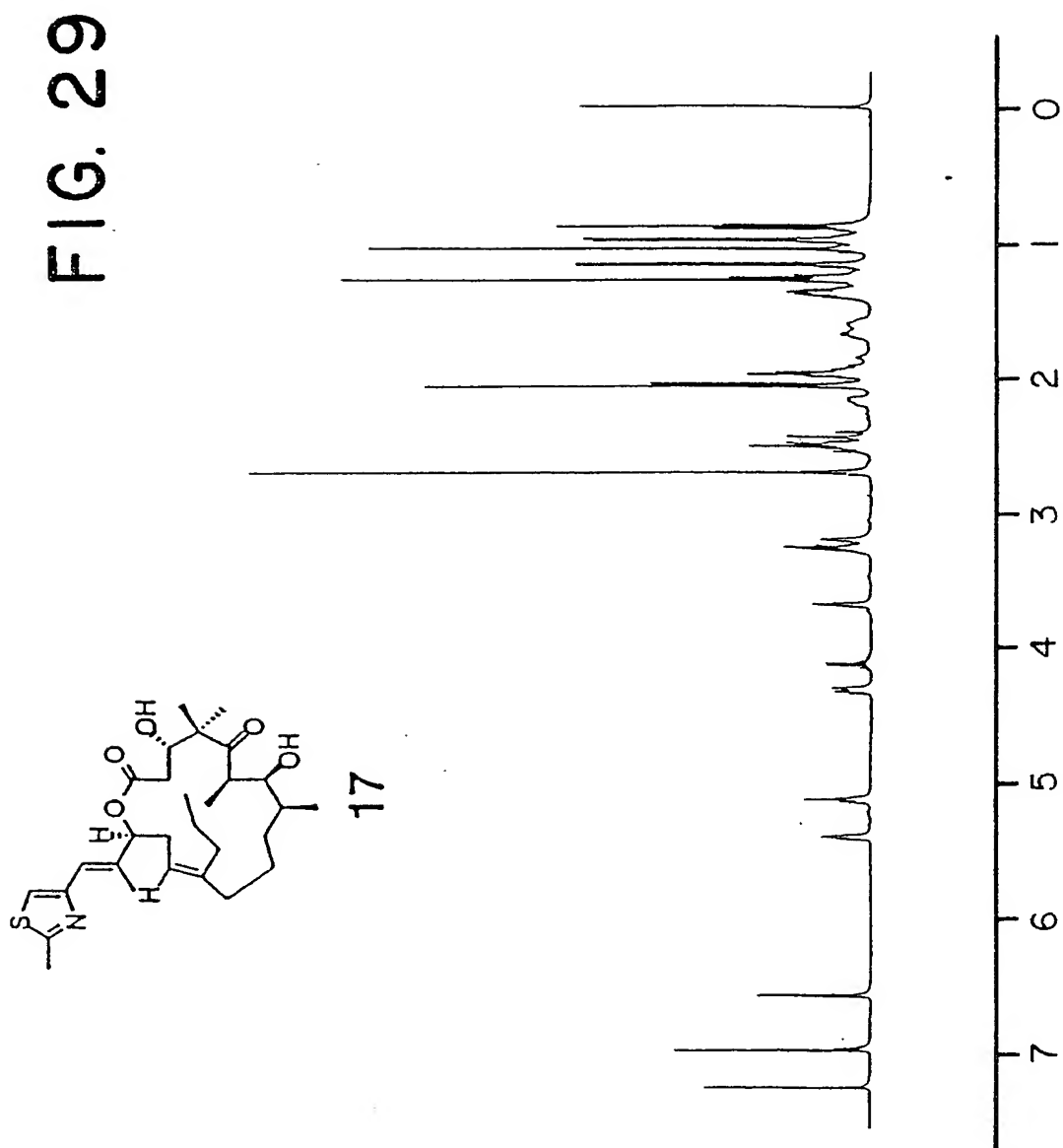
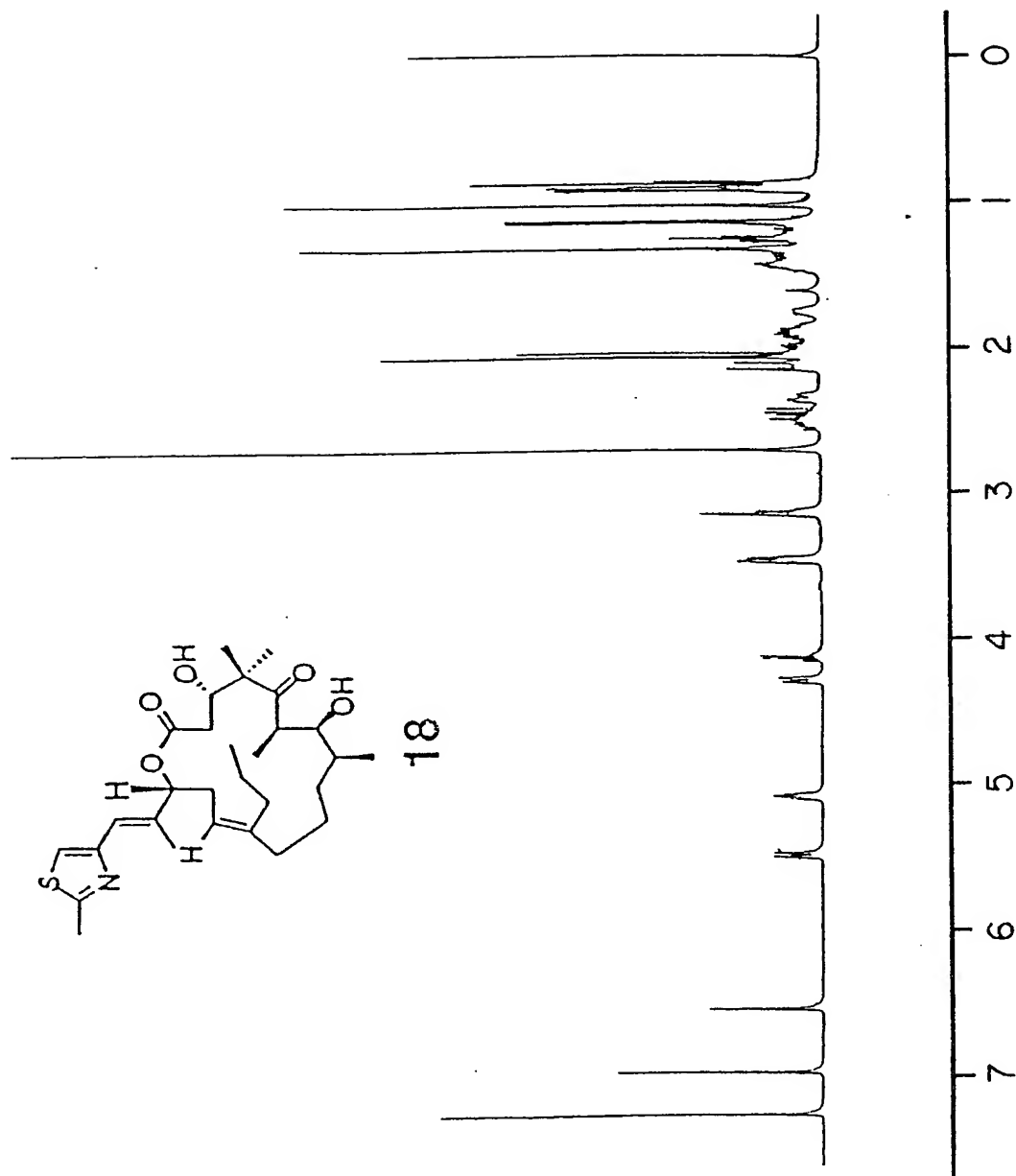
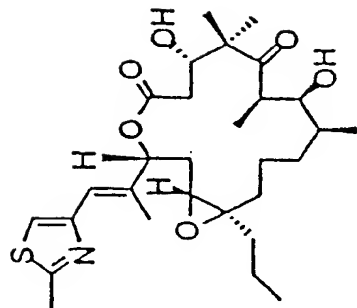


FIG. 30



—  
३  
७  
—  
८



९५

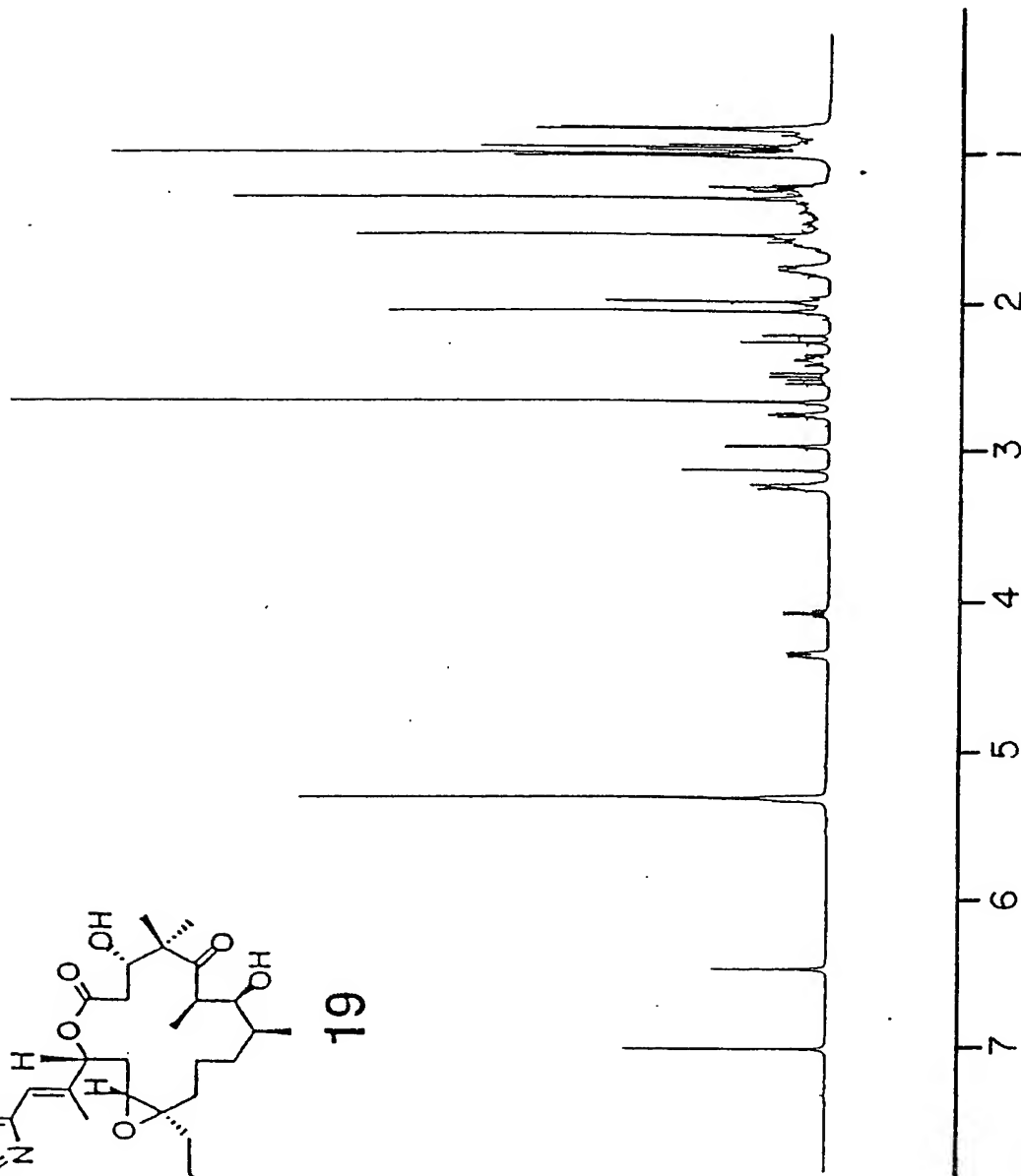
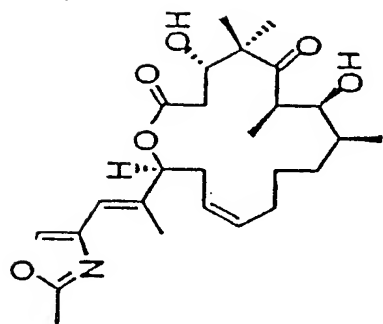
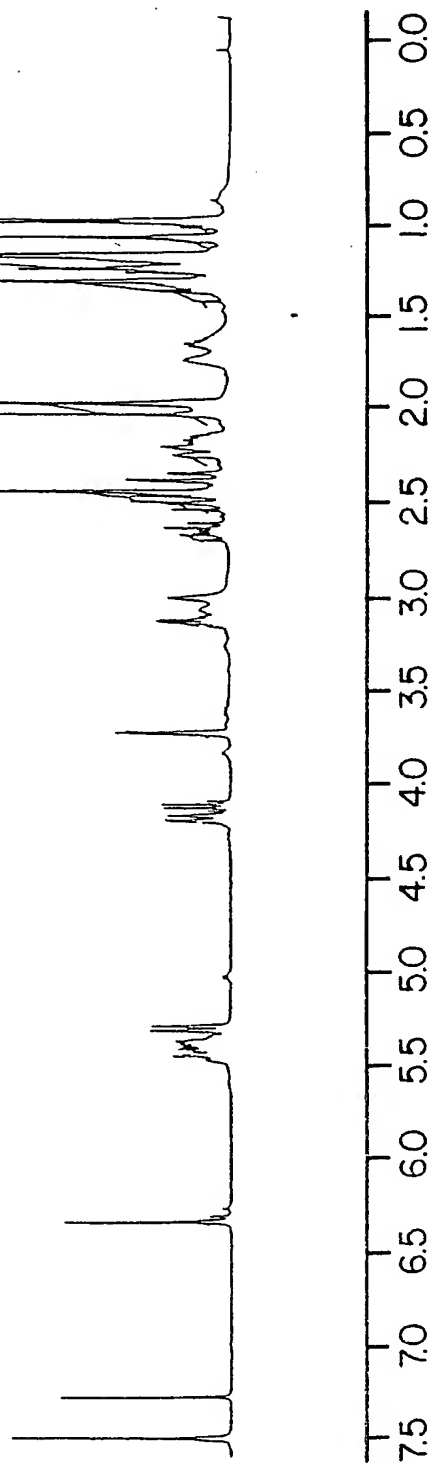


FIG. 32



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FIG. 33

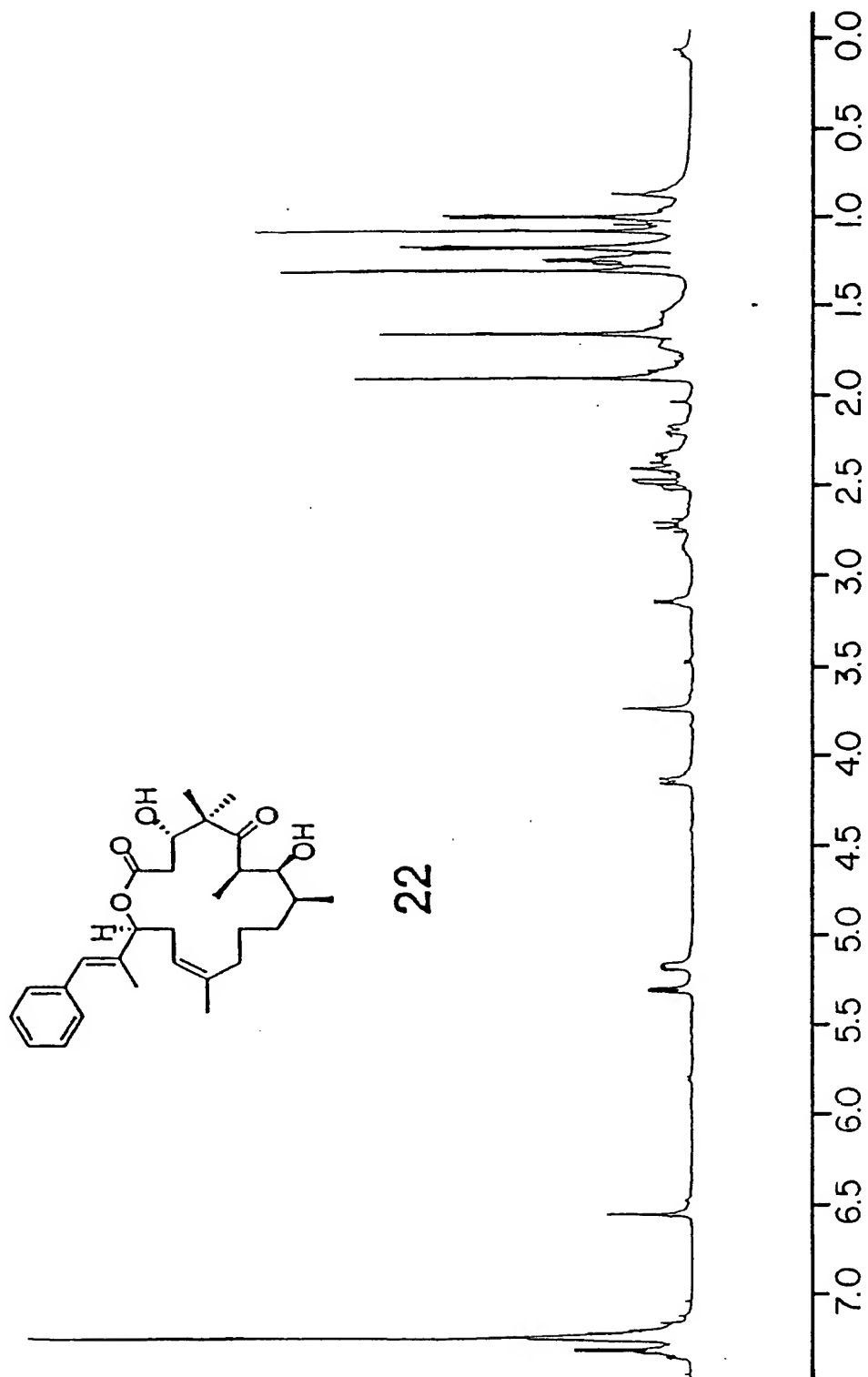


FIG. 34

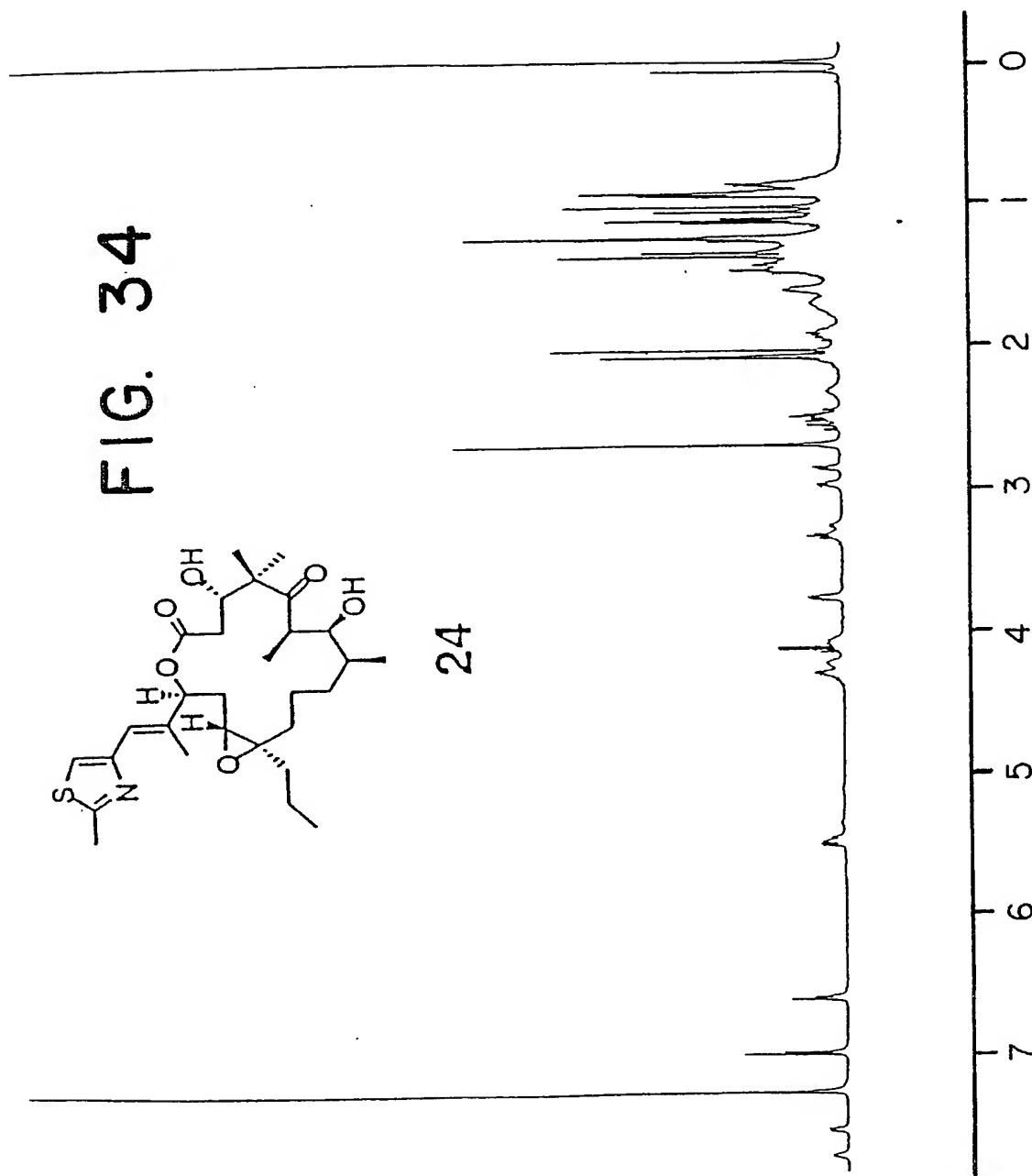
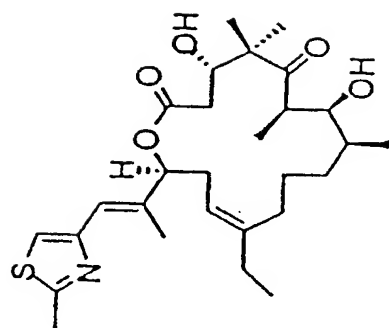


FIG. 35



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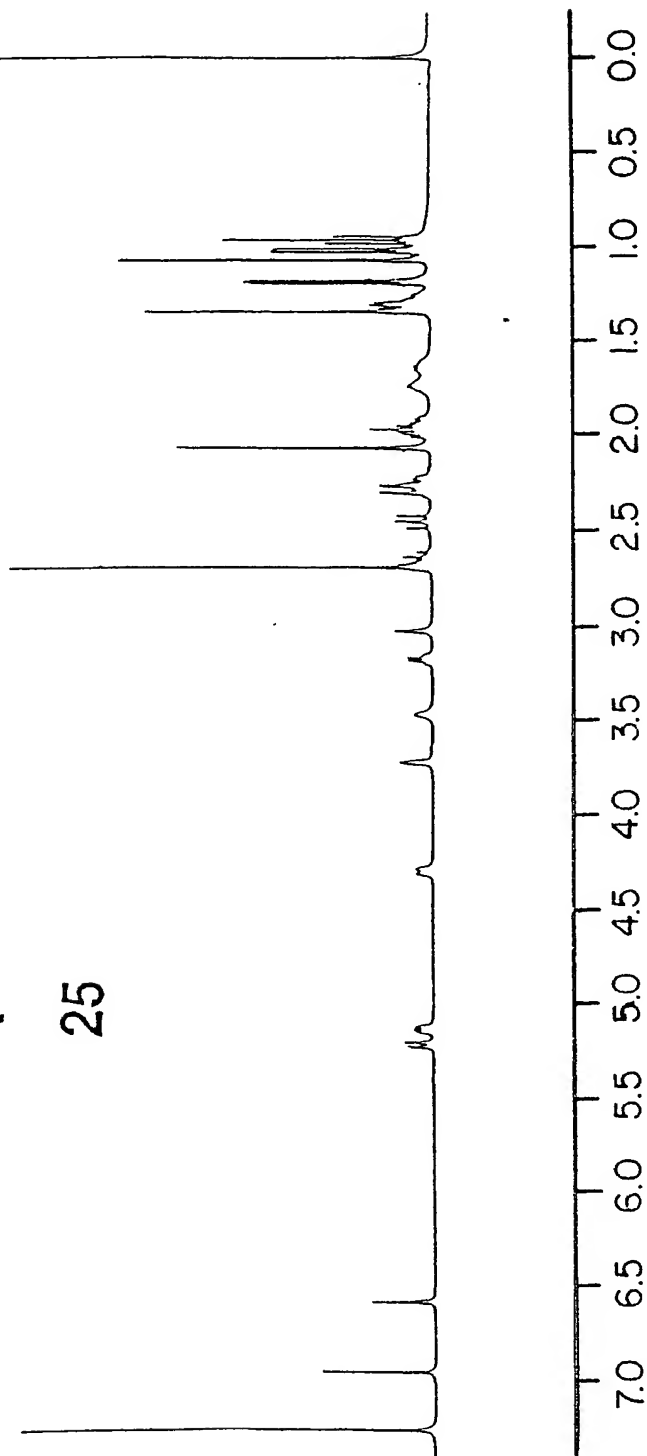
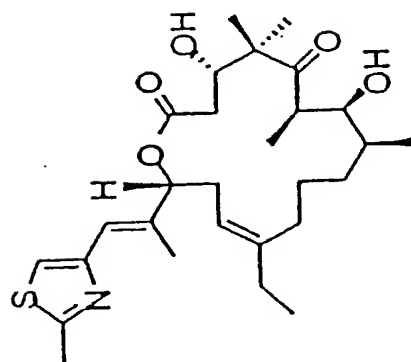
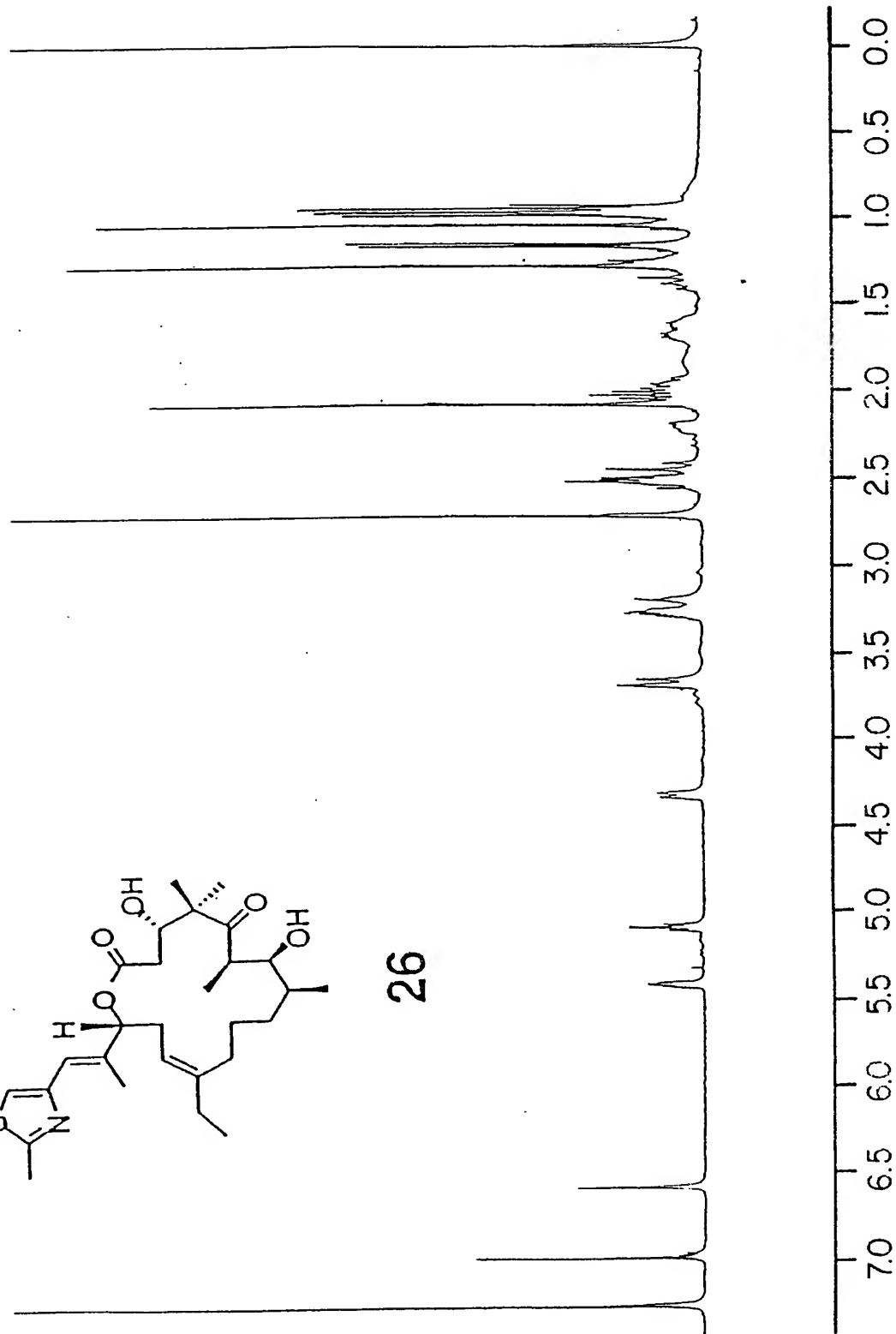


FIG. 36



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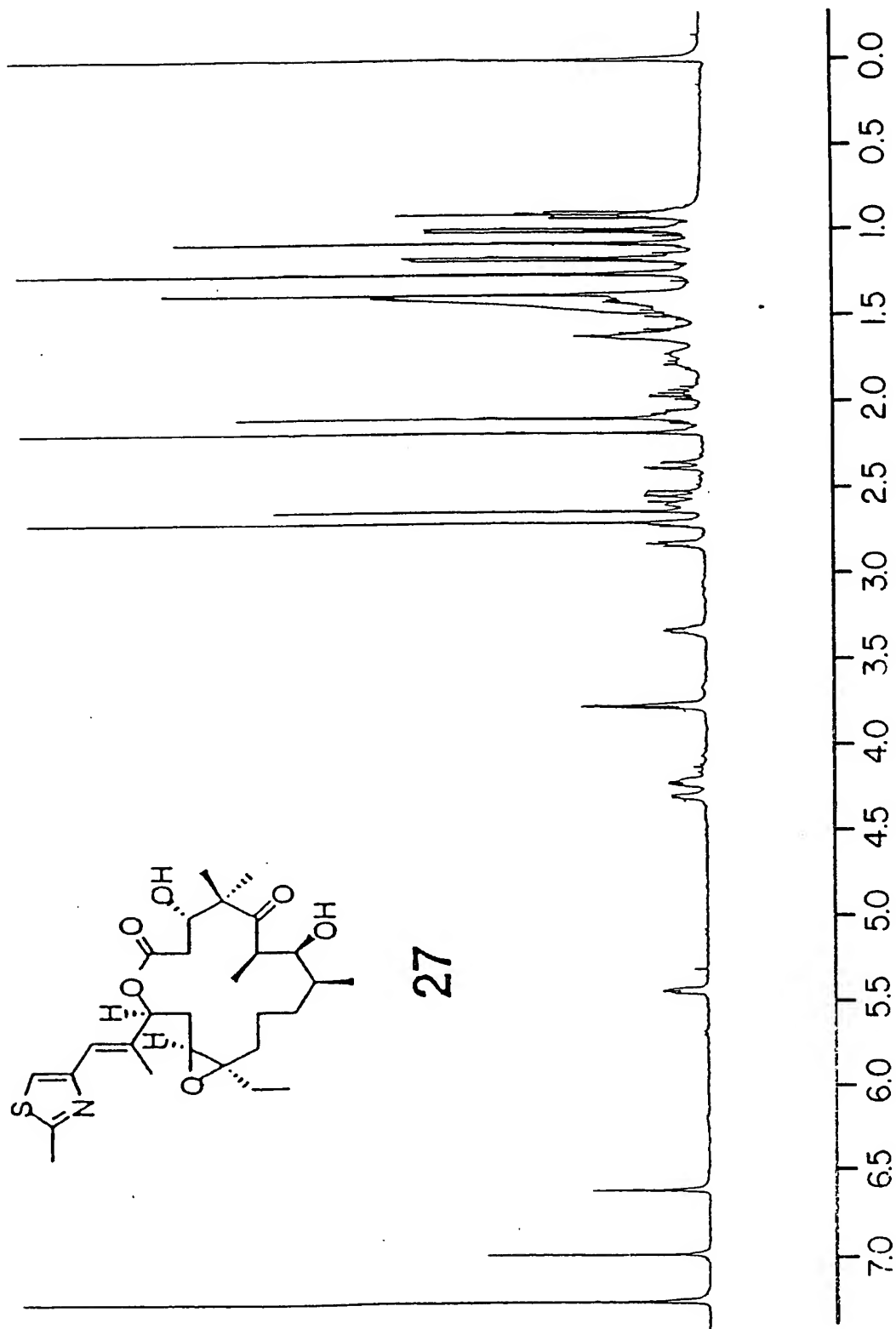


FIG. 38

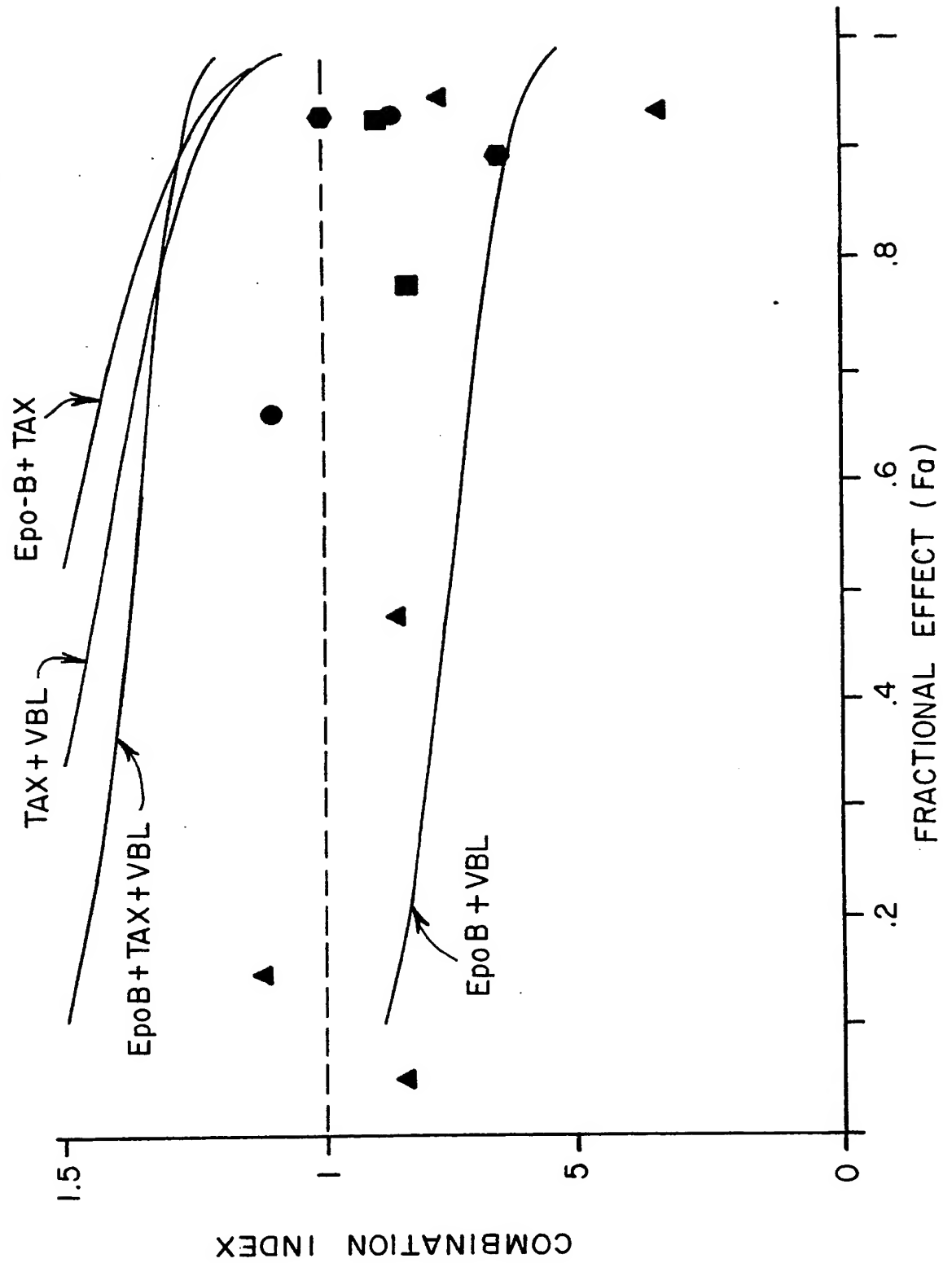
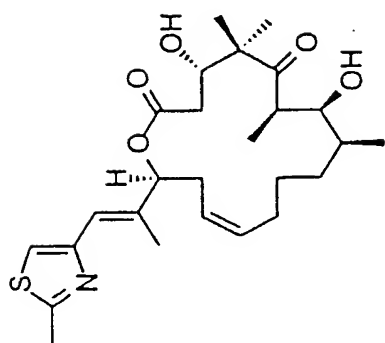
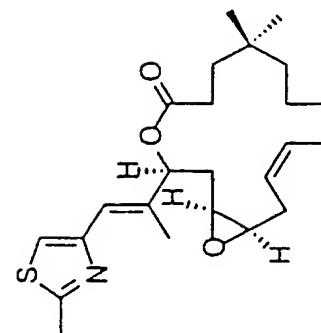


FIG. 39A



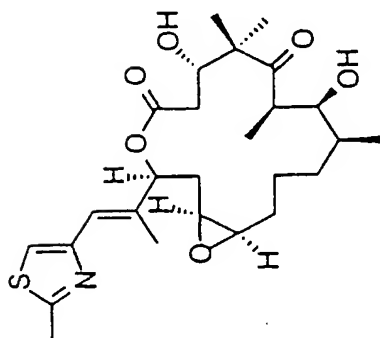
desoxyepothilone A

**1**  
(0.022)  
[0.012]

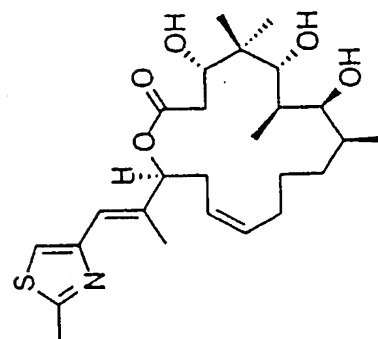


epothilone A

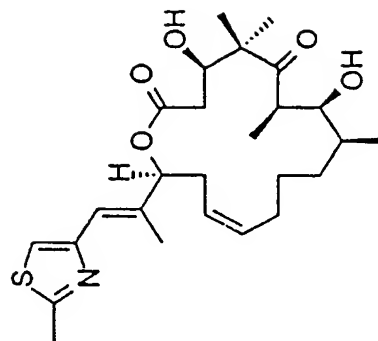
(0.0027)  
[0.020]



**3**  
(271.1)  
[22.4]

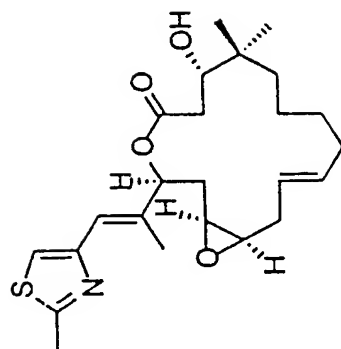


**2**  
(14.23)  
[6.28]

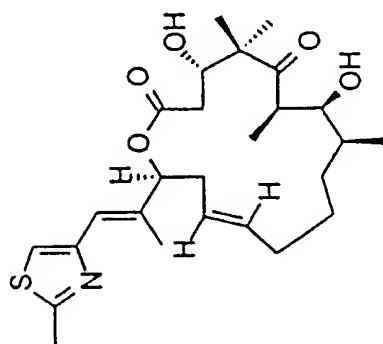


**4**  
(2.12)  
[43.0]

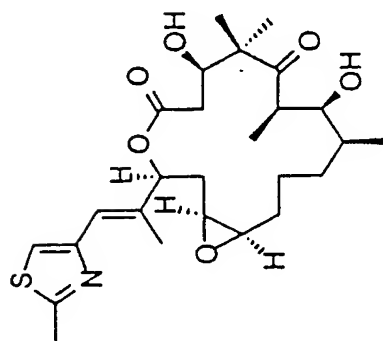
FIG. 39B



**7**  
(7.36)  
[9.82]

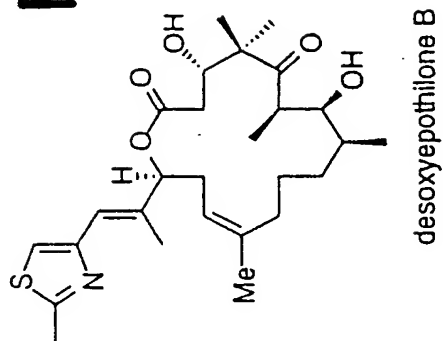


**6**  
(0.052)  
[0.035]

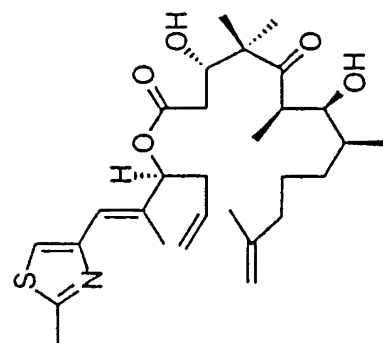


**5**  
(>20)  
[35.2]

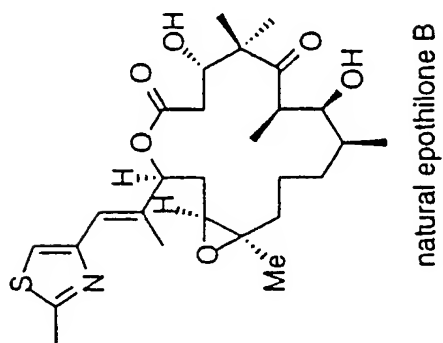
FIG. 40A



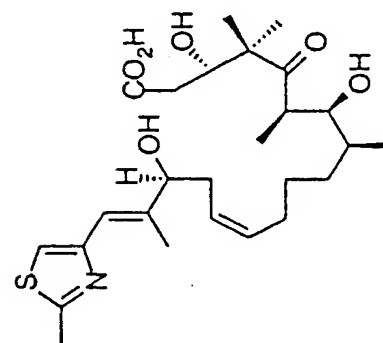
**10**  
(0.0095)  
[0.017]



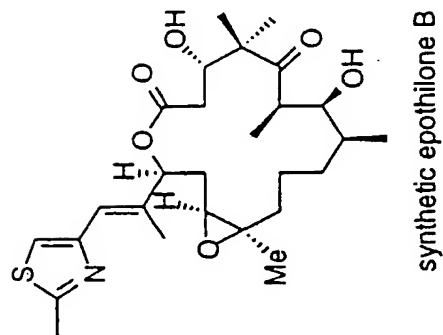
**13**  
(11.53)  
[5.63]



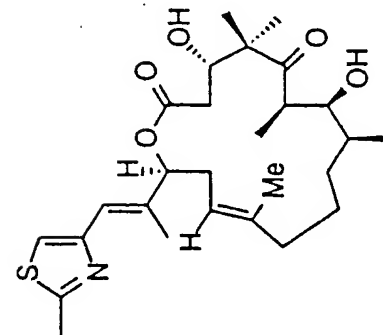
**9**  
(0.00017)  
[0.0012]



**12**  
(0.79)  
[>5]



**8**  
(0.00044)  
[0.0026]



**11**  
(0.090)  
[0.262]

FIG. 40B

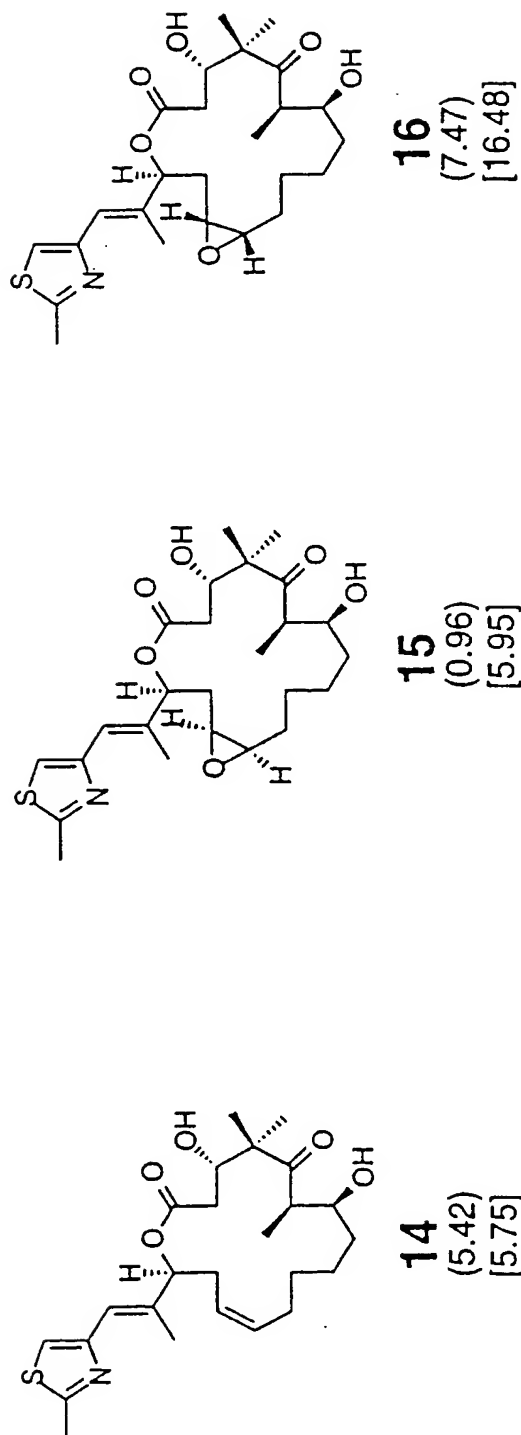


FIG. 41A

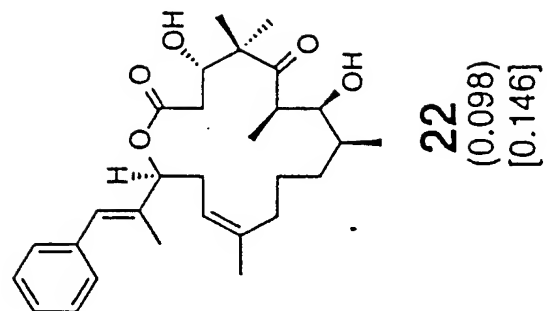
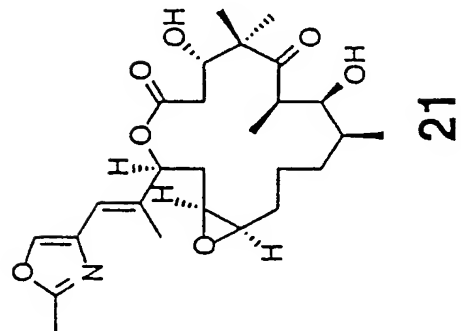
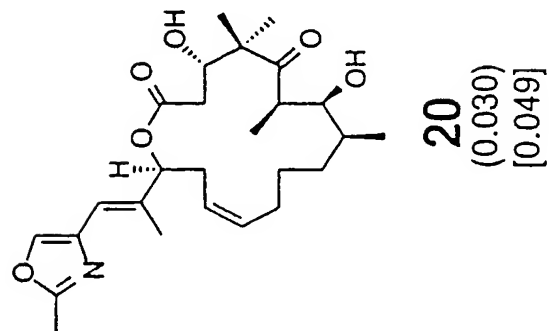
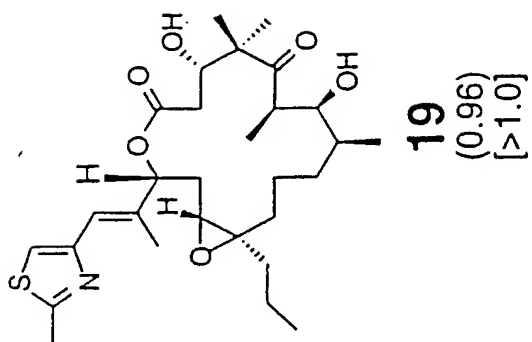
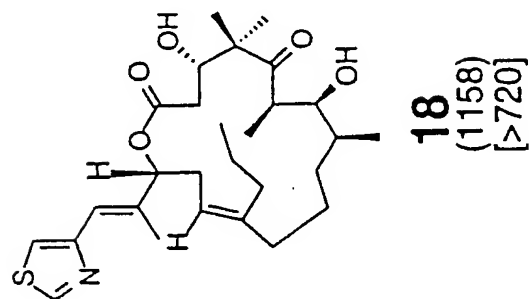
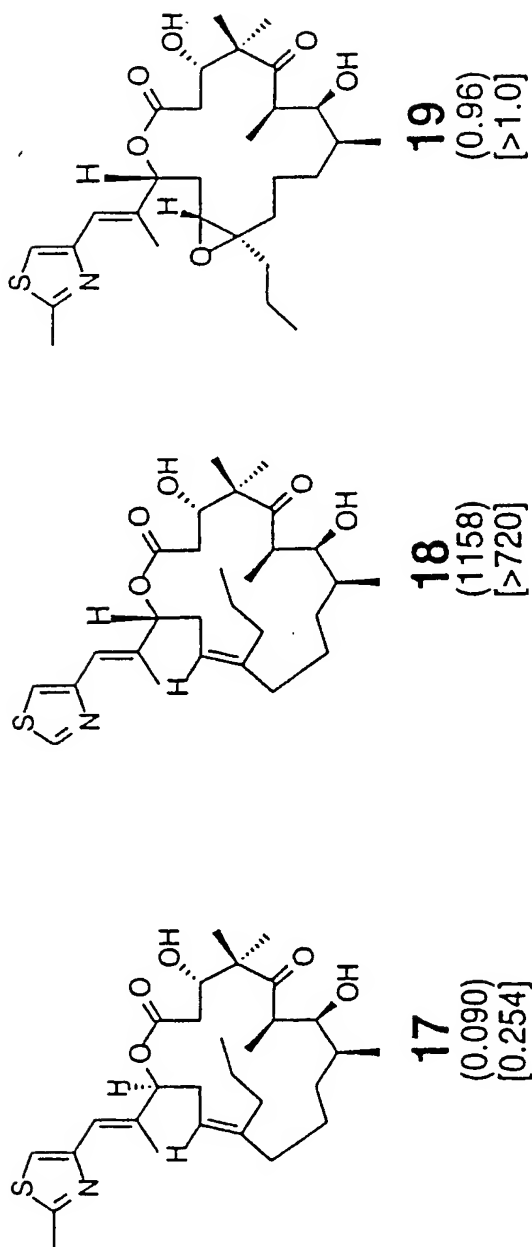


FIG. 41B

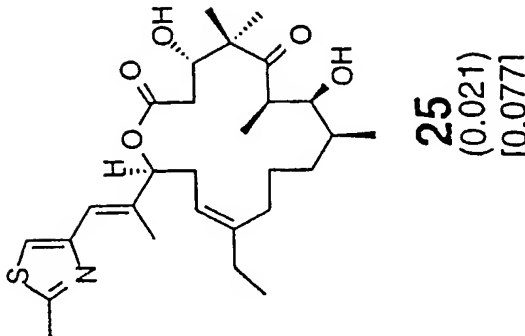
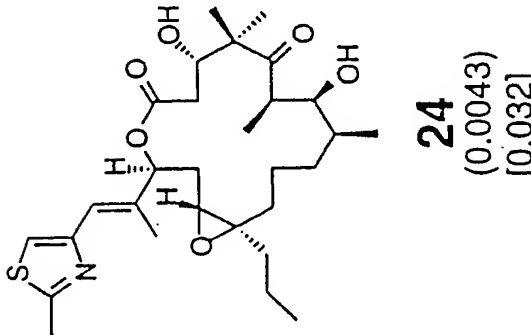
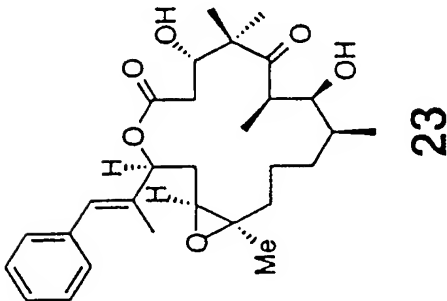
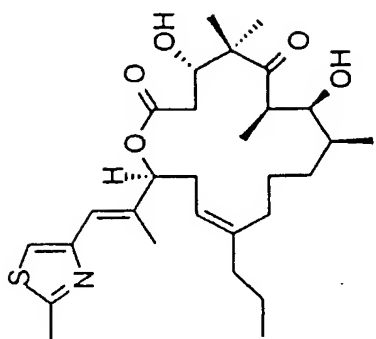
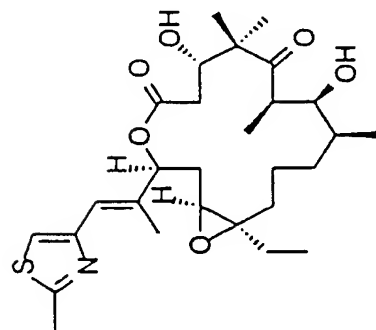


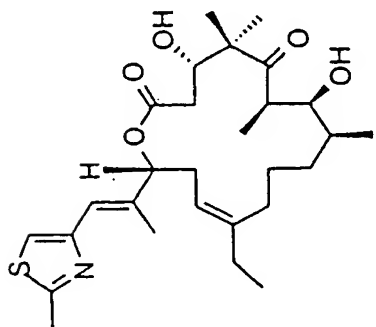
FIG. 42A



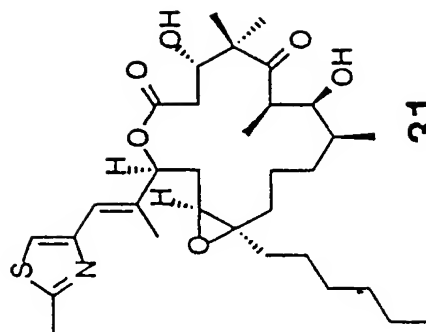
**27**  
(0.0010)  
[0.0072]



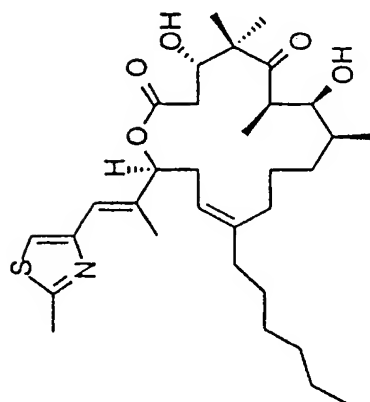
**28**  
(0.039)  
[0.067]



**29**  
(0.055)  
[0.197]



**30**  
(0.044)  
[0.108]



**31**  
(0.027)  
[0.049]

FIG. 42B

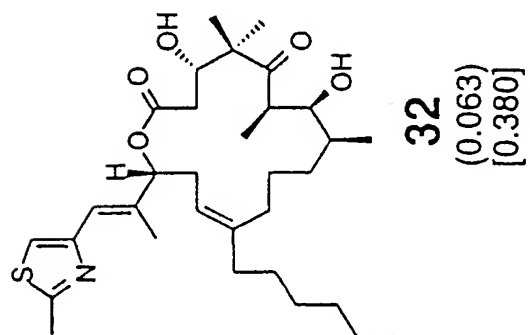
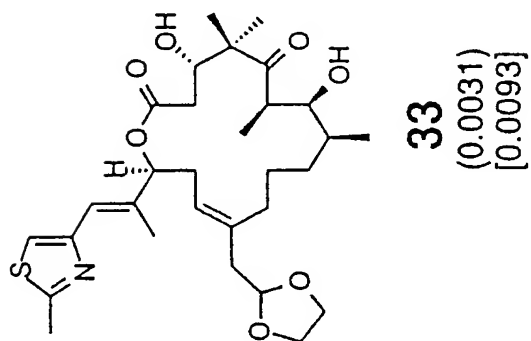
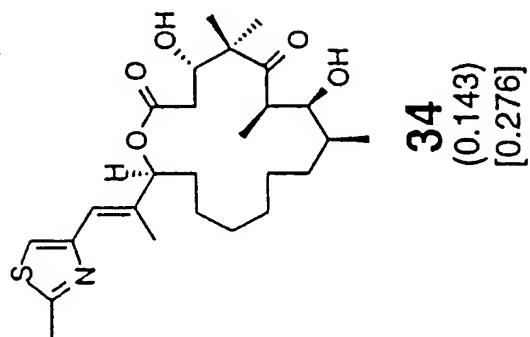


FIG. 42C

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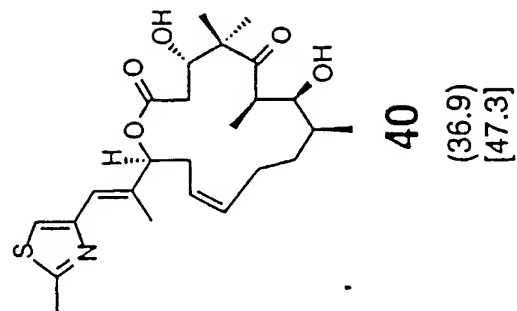
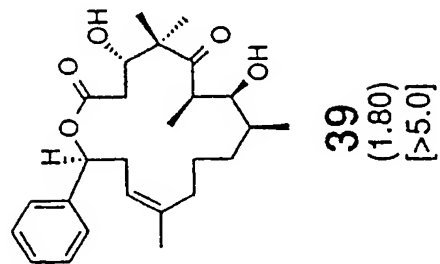
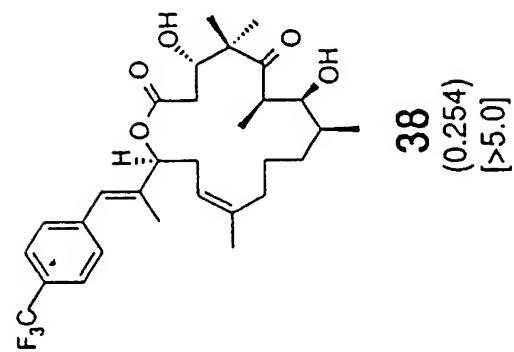
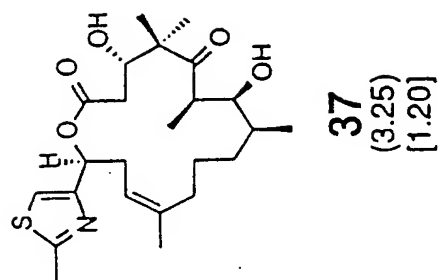
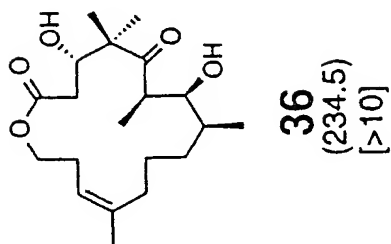
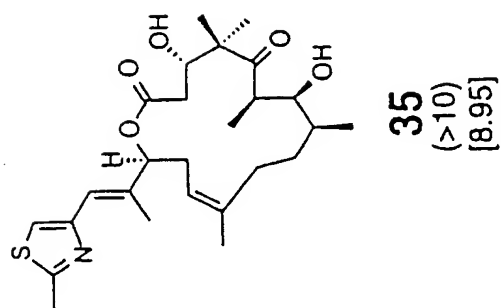


FIG. 42D

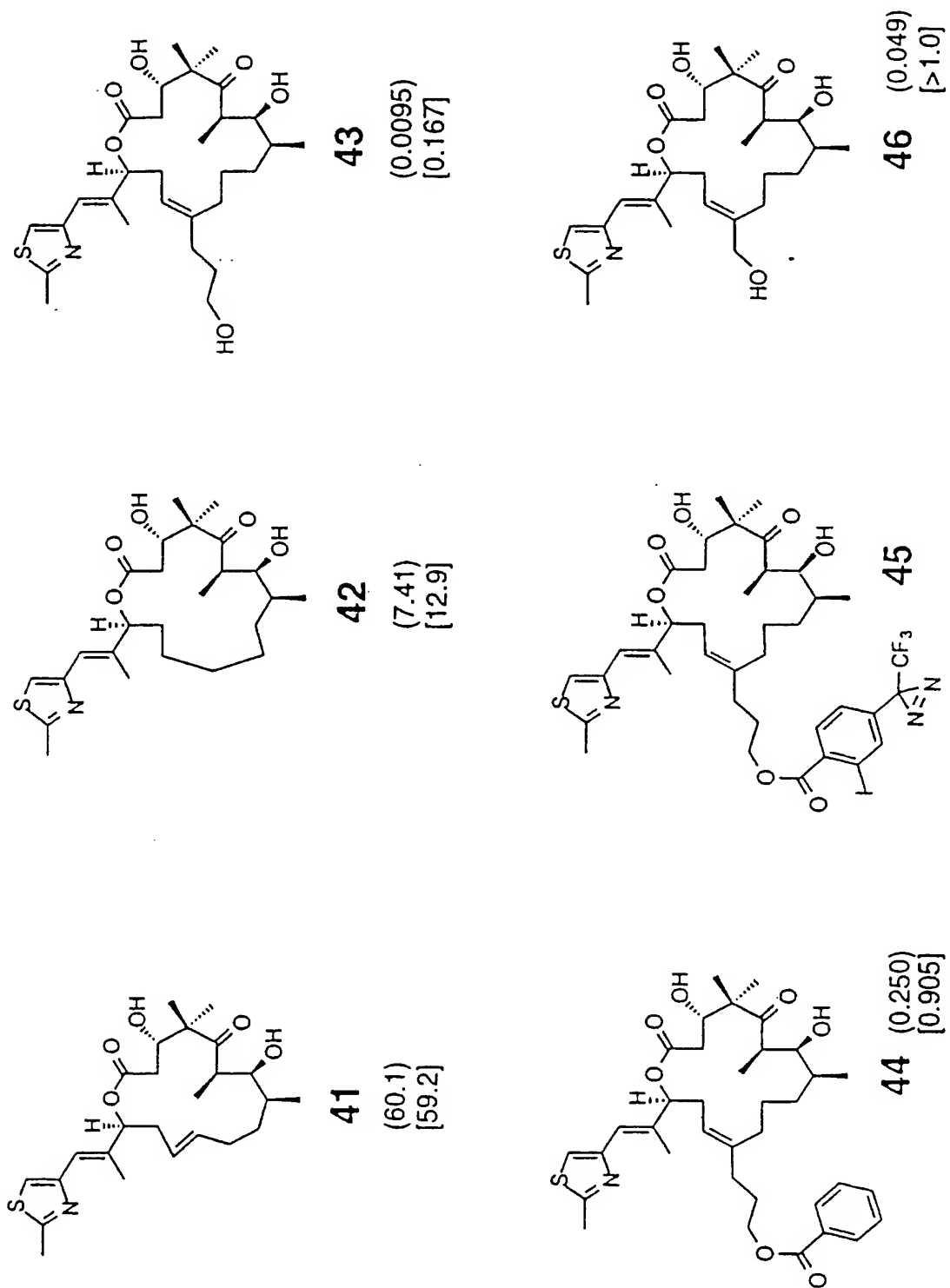
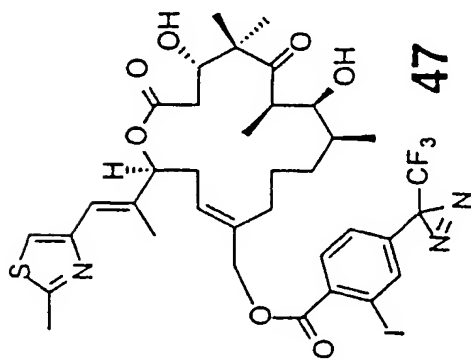
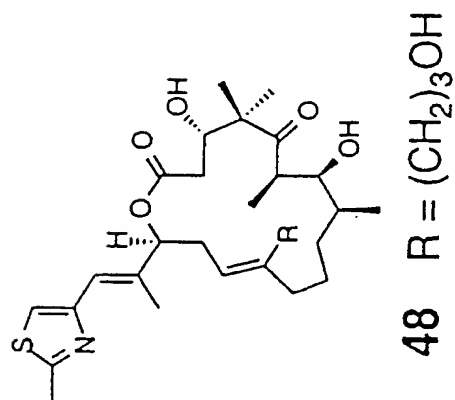
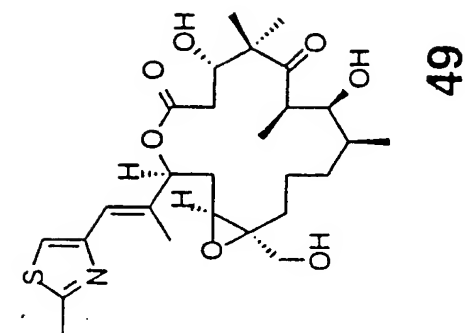
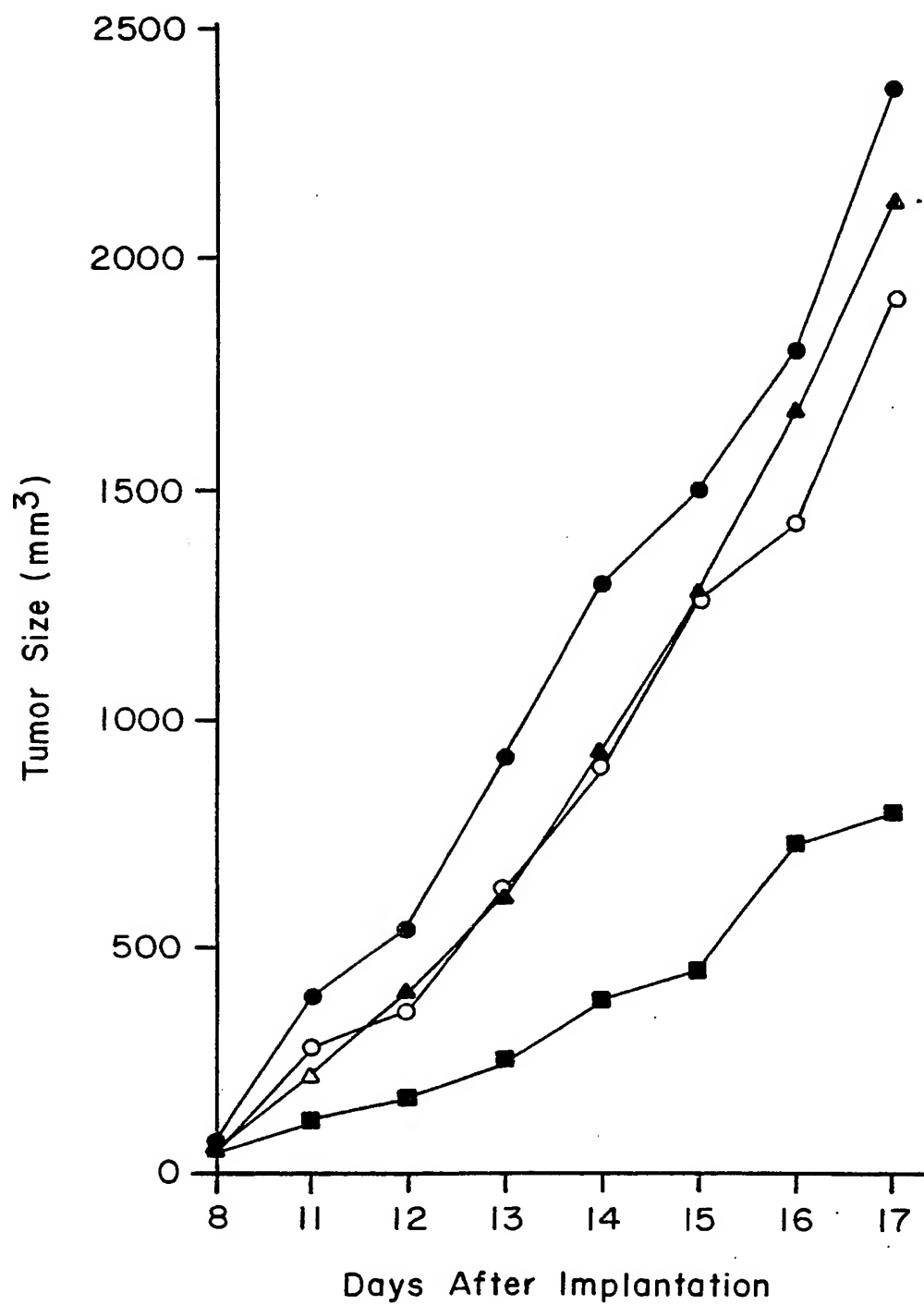


FIG. 42E



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FIG. 43A



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FIG. 43 B

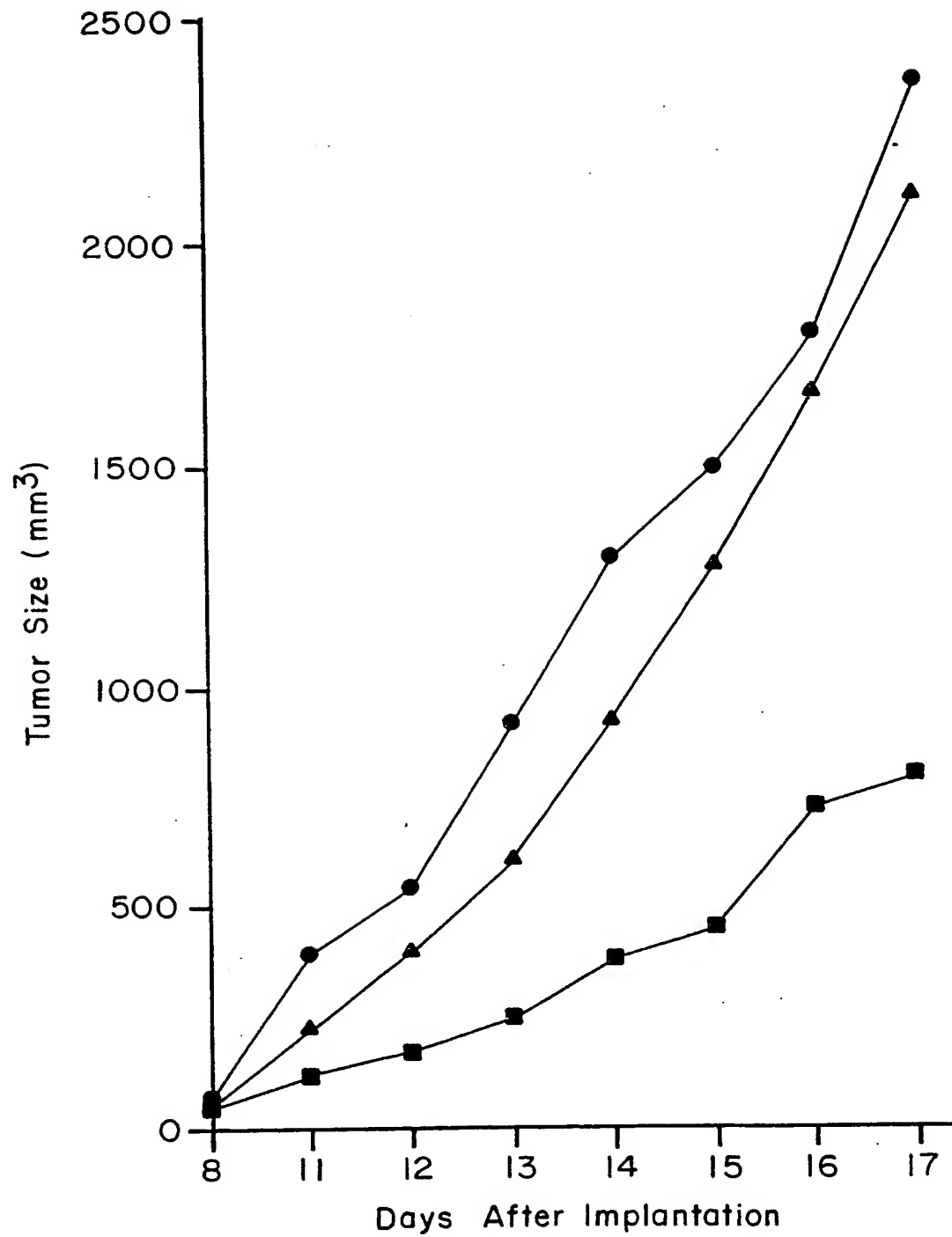


FIG. 44A

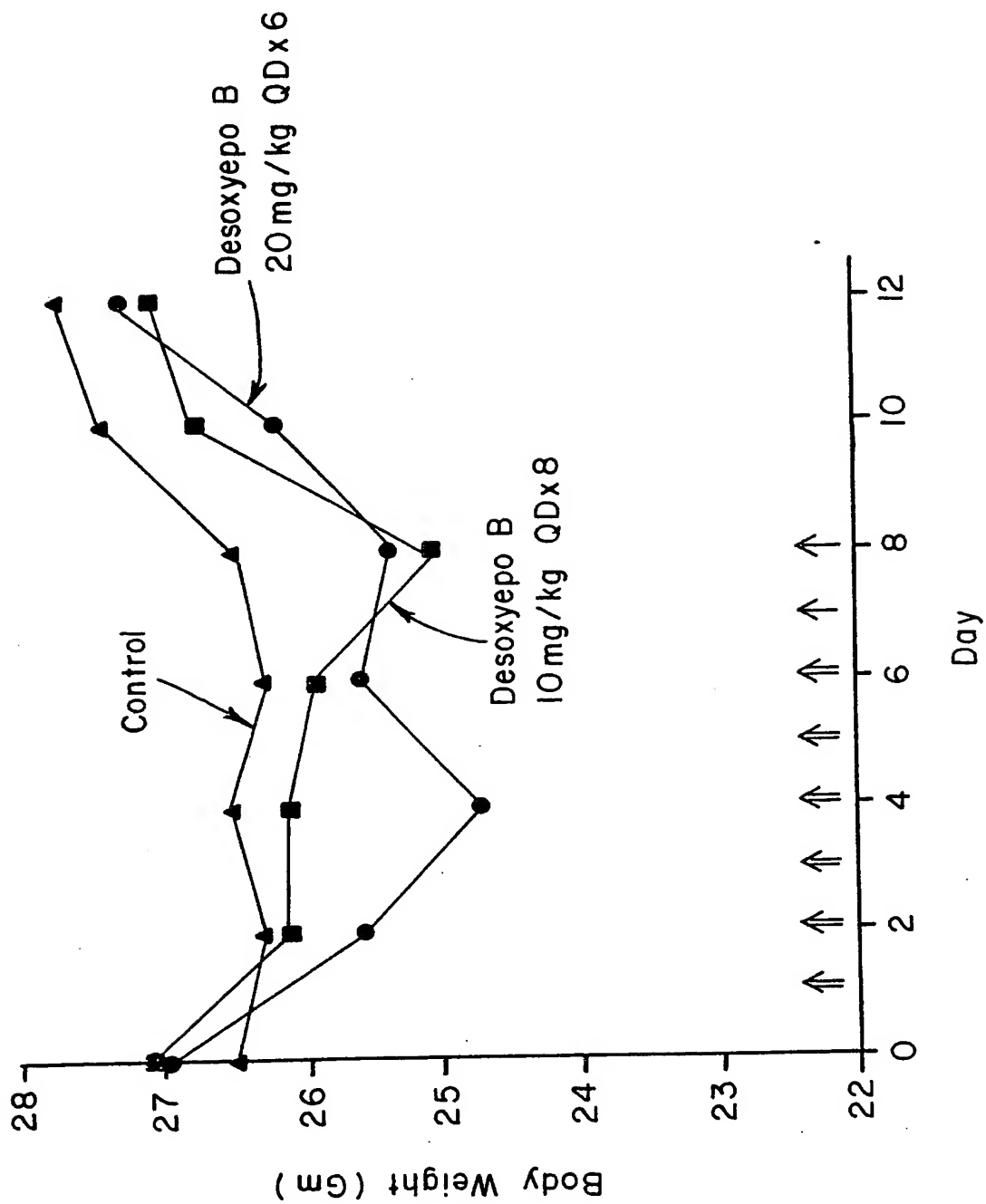
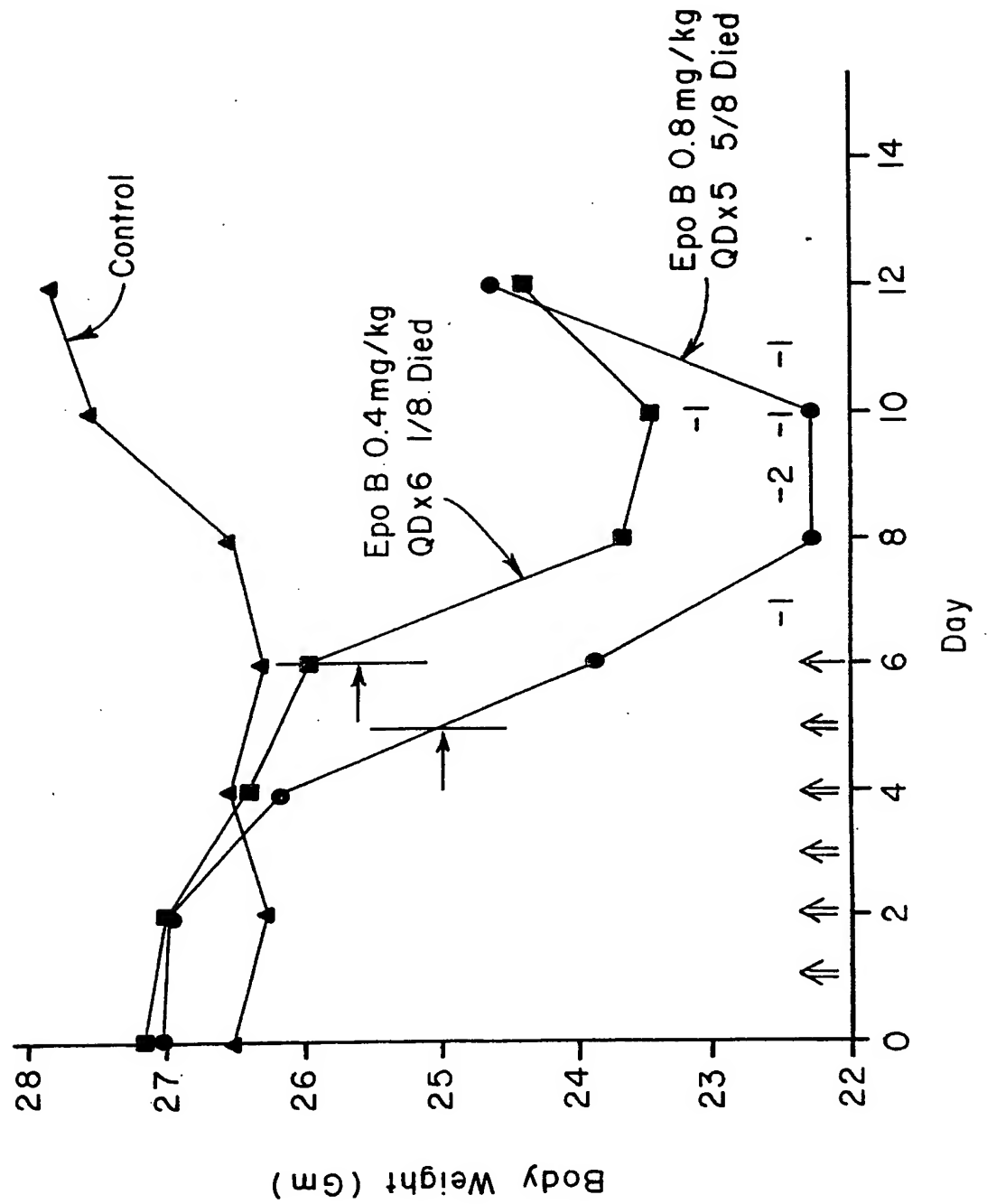
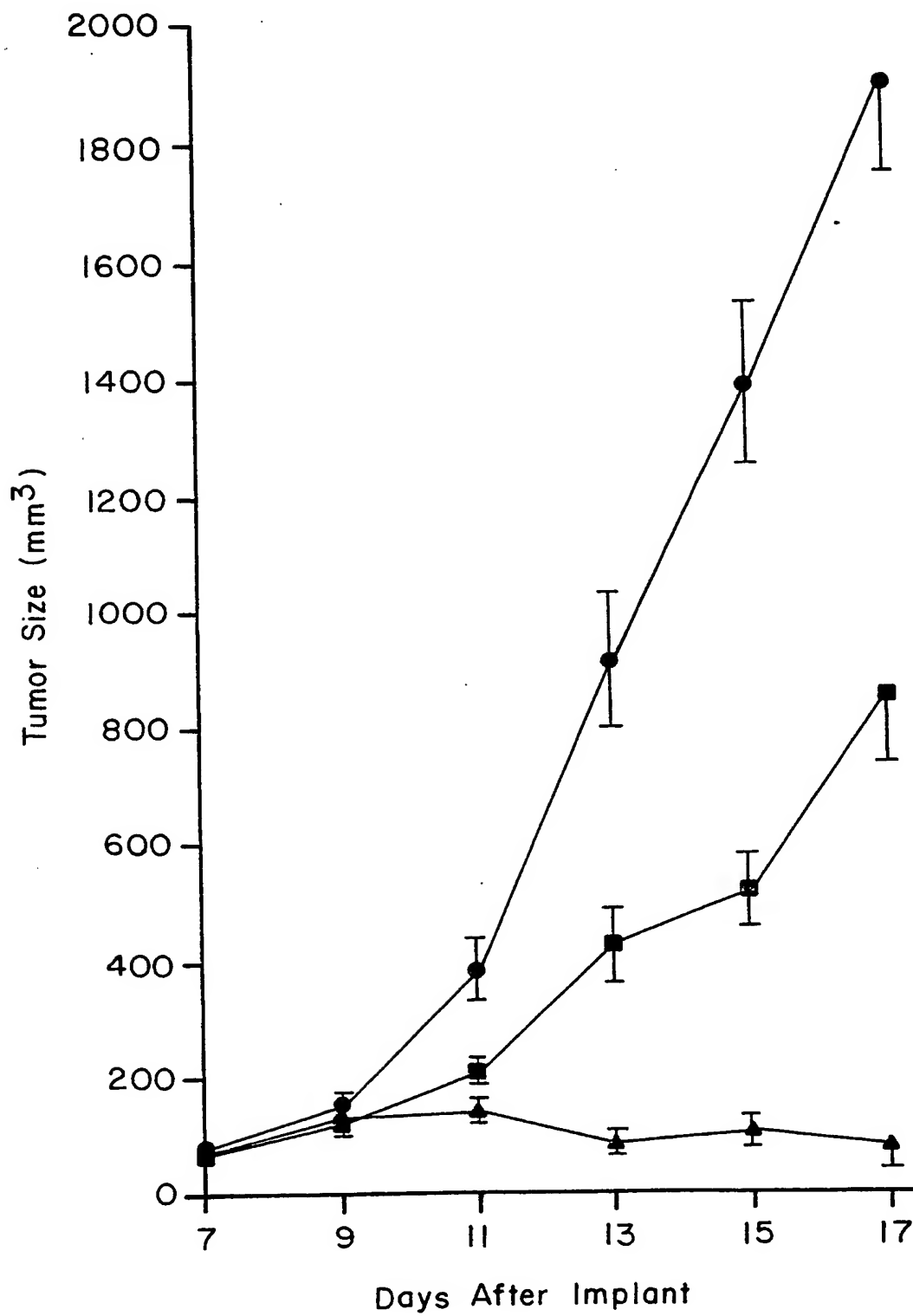


FIG. 44B



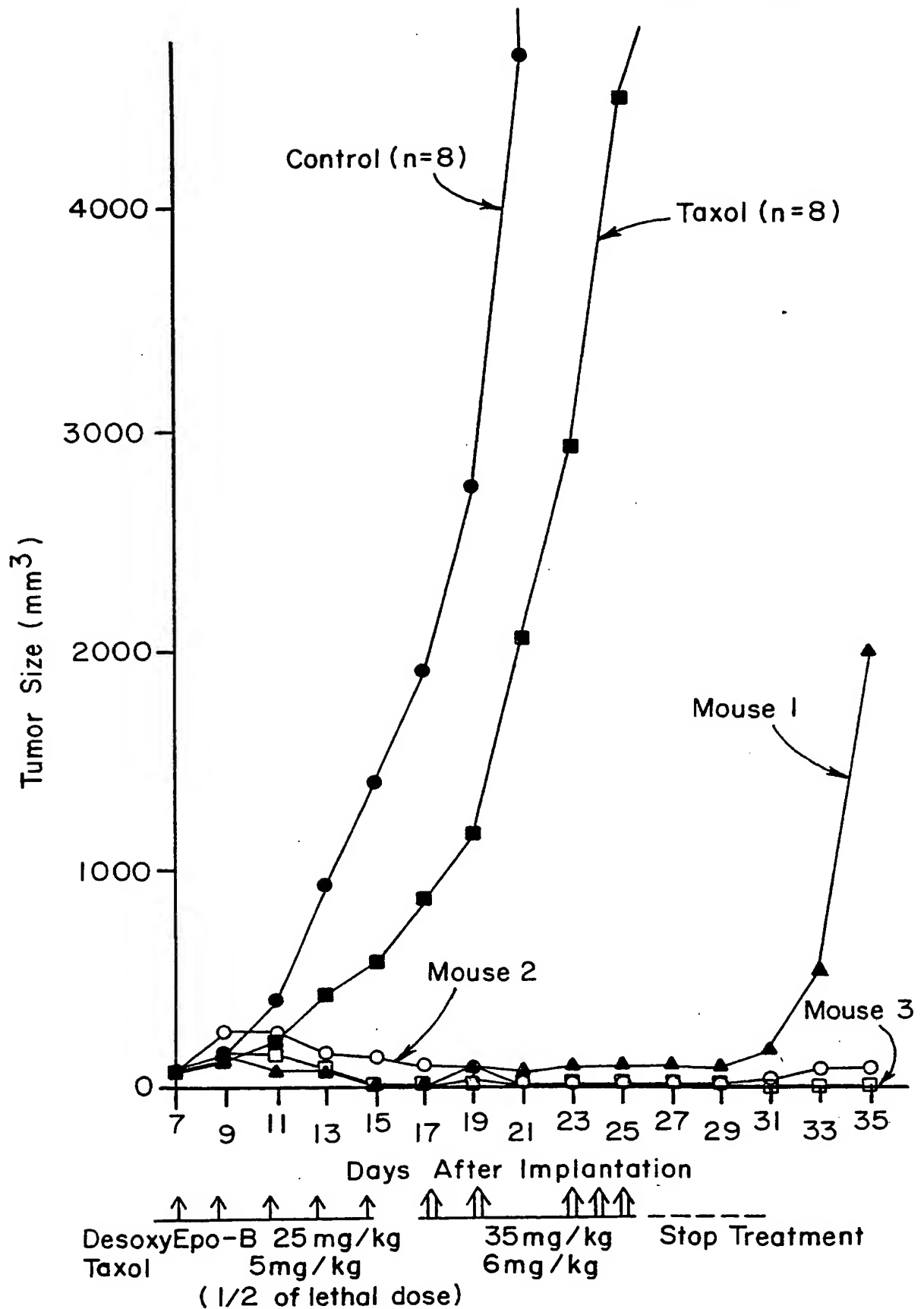
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FIG. 45A



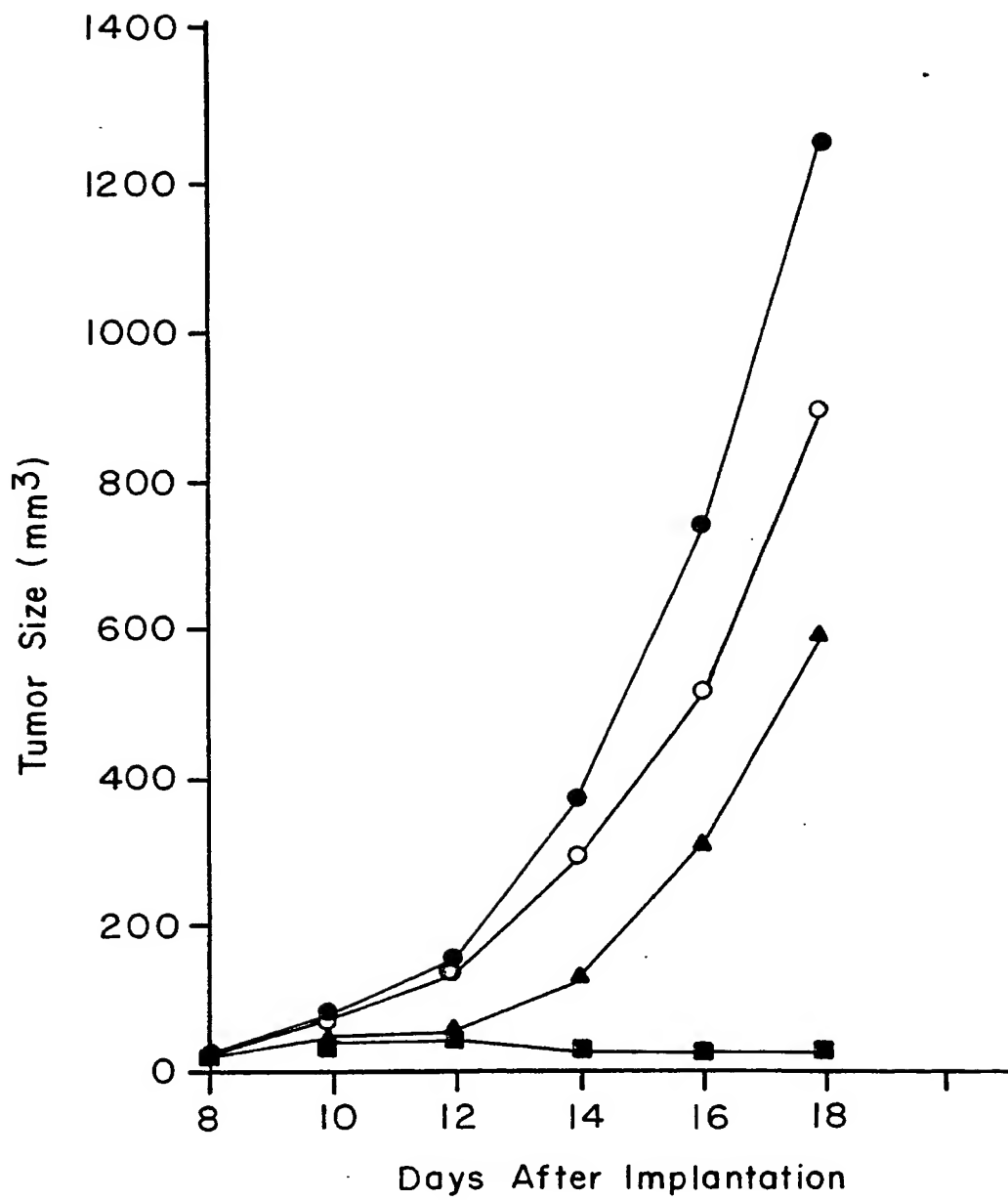
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FIG. 45 B



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FIG. 46



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FIG. 47

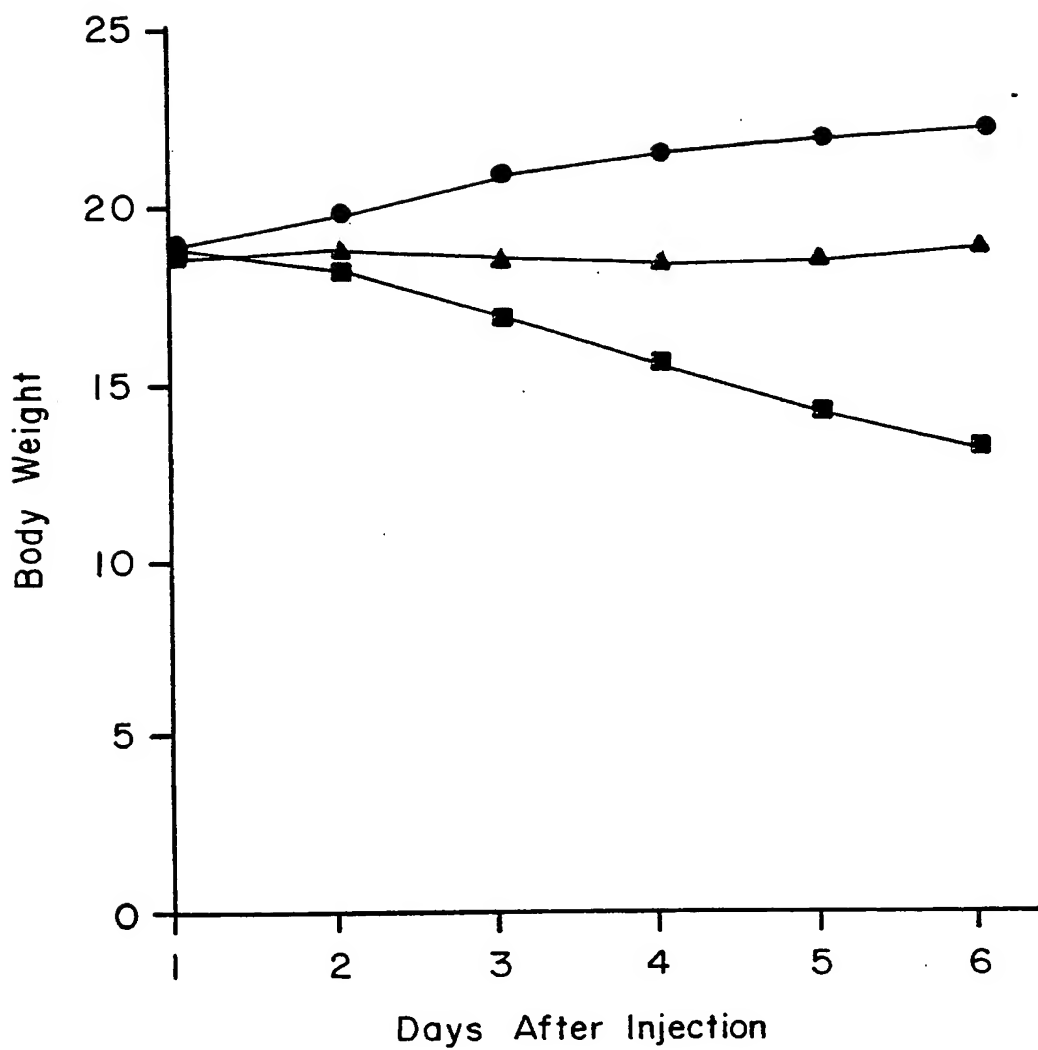


FIG. 48

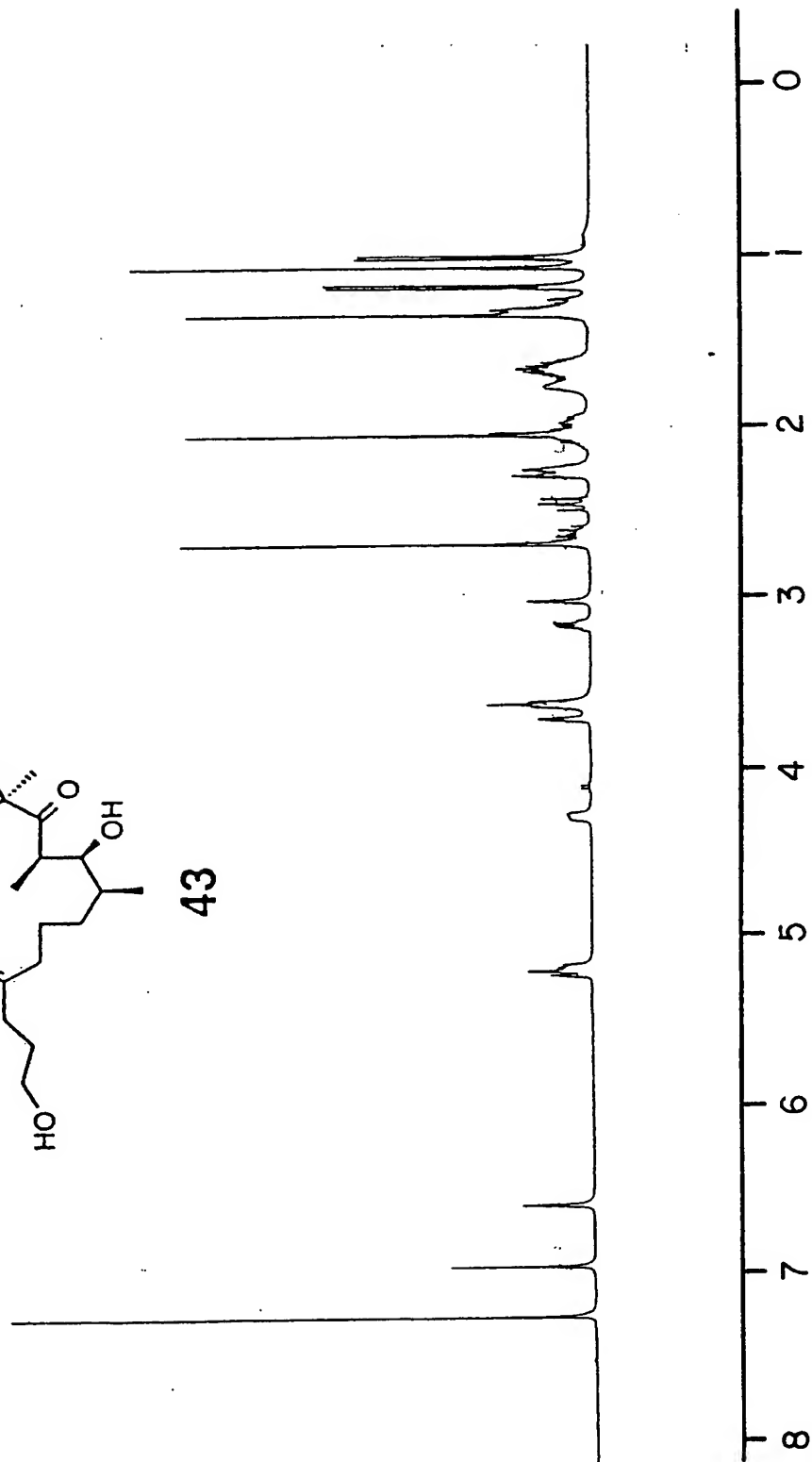
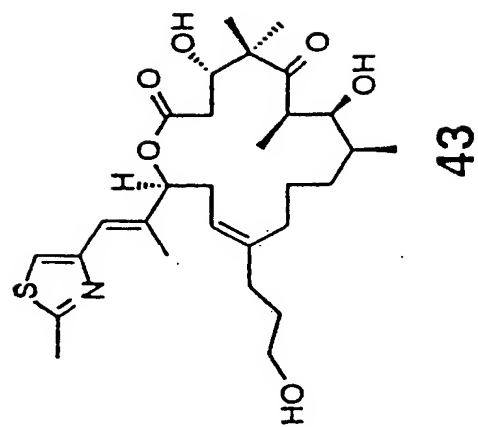
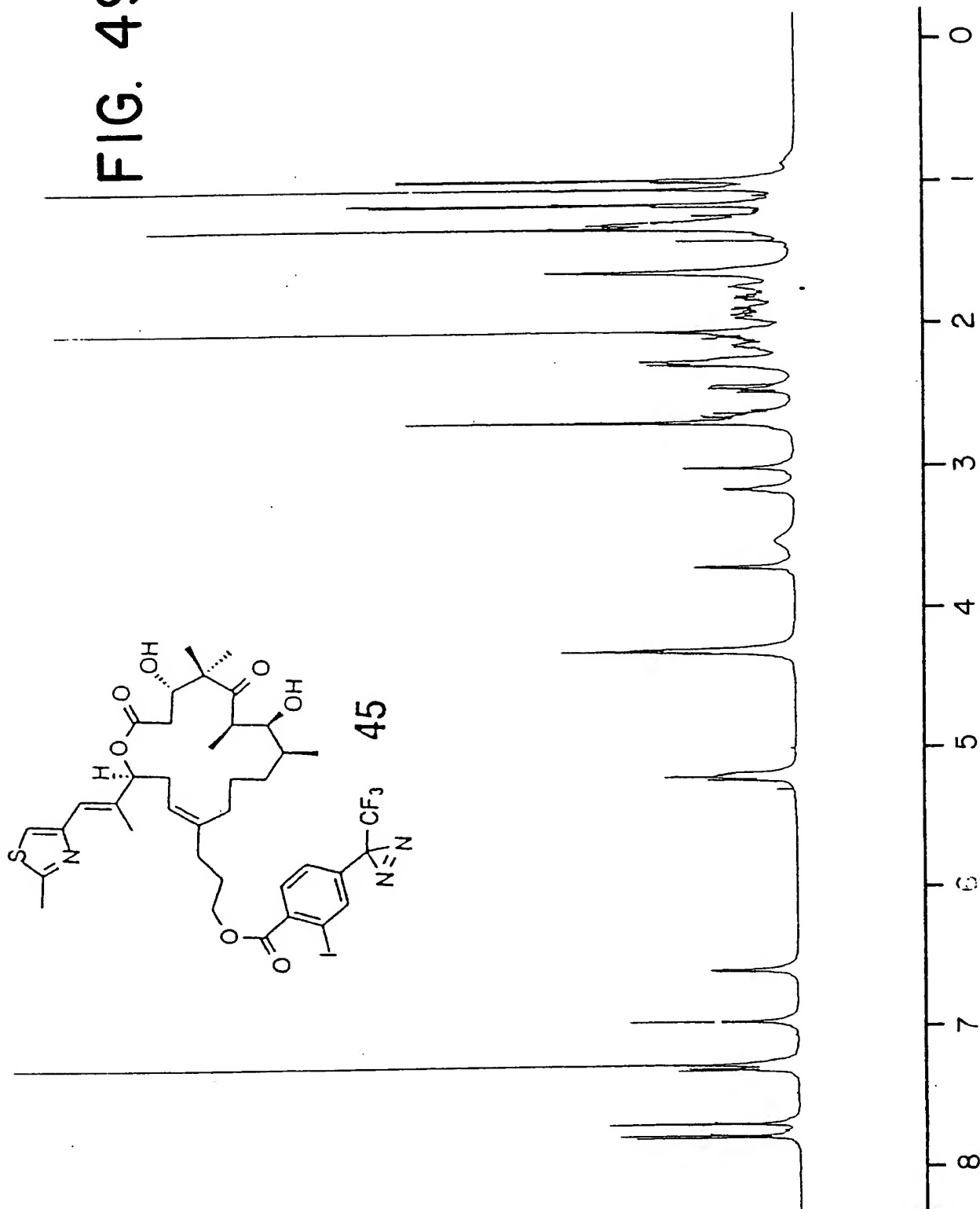
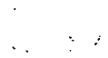


FIG. 49





Condition	Control (n=10)	MCI (n=10)	AD (n=10)
1	~95	~85	~75
2	~90	~80	~70
3	~85	~75	~65
4	~85	~75	~65

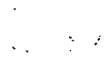


FIG. 51

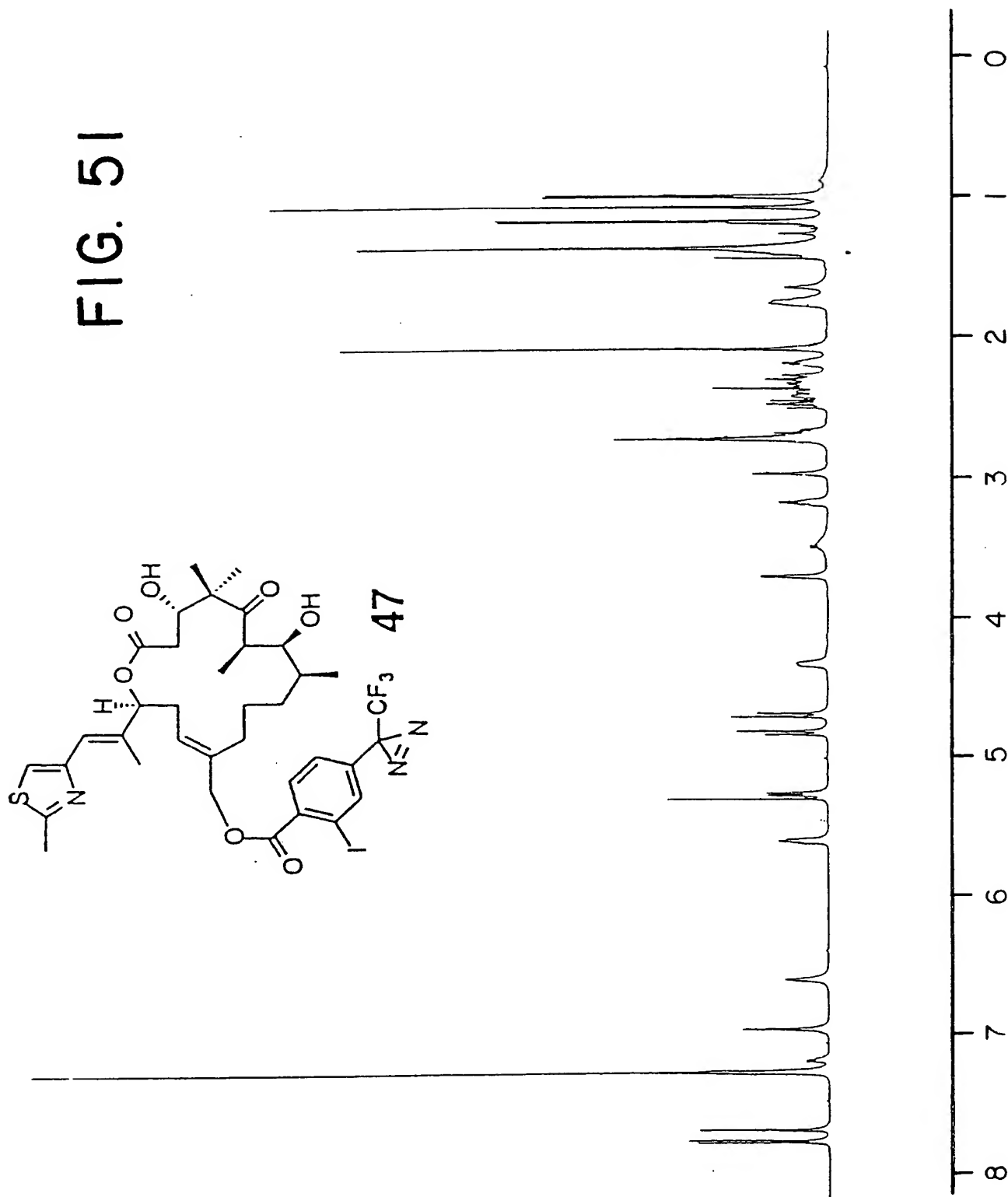


FIG. 52

